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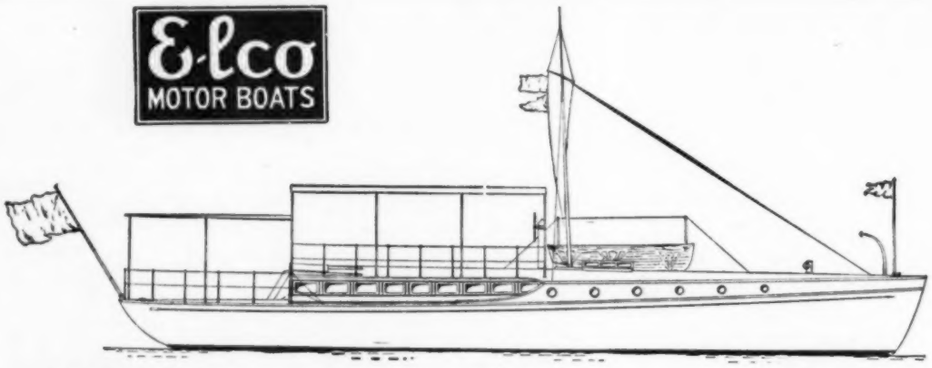

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The National Magazine **MOTOR BOATING** of Motor Boating

September, 1909 Vol. IV., No. 3.

Entered as second-class matter at the New York, N. Y., Post Office. Copyright, 1909, by New Publication Company

Published Monthly by
NEW PUBLICATION COMPANY
2 DUANE STREET, NEW YORK CITY

G. L. Willson, President George von Utassy, Treasurer
C. J. Shearn, Secretary

Telephone: 1240 Beekman Cable Address: Motoria

10 *cents a copy. Subscription* $1.00 *a year.*
Foreign $2.00 *a year.*

European Agents: Saarbach's News Exchange, Mainz, Germany.

"Bow and bow"—These two boats, the Elizabeth and Lelia, recently raced in this way for five miles up Boston Harbor.

MOTOR BOATING

THE NATIONAL MAGAZINE OF MOTOR BOATING

How Dixie II Defended the Gold Cup

The Annual Race for the Trophy of the American Power Boat Association. A New Speed Record Made in the Thousand Islands.

By Harold Whiting Slauson.

DIXIE II, racing under the colors of the Thousand Island Yacht Club, successfully defended the gold challenge cup, offered during the past six years by the American Power Boat Association, and the speedy challenger of last year has become the successful defender for the season just ended. Although winning each of the three days' races from August 19th to 21st in such an easy manner that the result was at no time in doubt, Dixie II added glory to her former triumphs by breaking the competition record for speed by all boats under forty feet in length, in any kind of water, and, on the last day, covered the 32 miles of the course in one minute and 35 seconds under the hour and established a new mark of 32.87 miles an hour for her rivals of the future to aim at. This is an average of 1.85 miles per hour better than her fastest time of last year when she wrested the cup from Chip III of the Chippewa Bay Yacht Club, the holder of the trophy for three years.

The course, as laid out by the Regatta Committee of the Thousand Island Yacht Club, was 10 2-3 miles in length, and all contesting boats were required to complete the circuit three times for each day's race. The start and finish line was drawn between the upper end of Hart Island and the lower bay of Alexandria Bay and was confined to the northwestern half of the channel. After crossing the starting line, the boats were required to run diagonally across the channel and thence down stream about five miles to a point nearly opposite Ironsides Island. The return was on the opposite side of the channel, and on all subsequent rounds the buoys marking the course were to be kept to port. Although the channel is rather narrow at this point and it was feared by many that sharp turns would be formed at either end of the course, the buoys were so placed that the racers could negotiate these turns at the highest speed with no danger of careening unduly. The manner in which the course was laid out enabled those on shore lining the wharves and piers of Alexandria Bay to witness the contest nearly as well as those in motor boats or yachts anchored near the line.

Rumor was rife with the names of speedy craft which were to enter the contest for the coveted trophy, and predictions were freely made that this season would be the last during which the cup would be raced for on the waters of the St. Lawrence. It was hoped that the changing of the rules last year by which all boats under forty feet in length were allowed to start on an even basis—thus entirely eliminating rating or handicapping—would tempt forth new and untried challengers, but whether it was because Dixie II appeared unbeatable, or what, the three boats courageous enough to tackle the famed craft at her own game were all racers familiar to every visitor and cottager on the river.

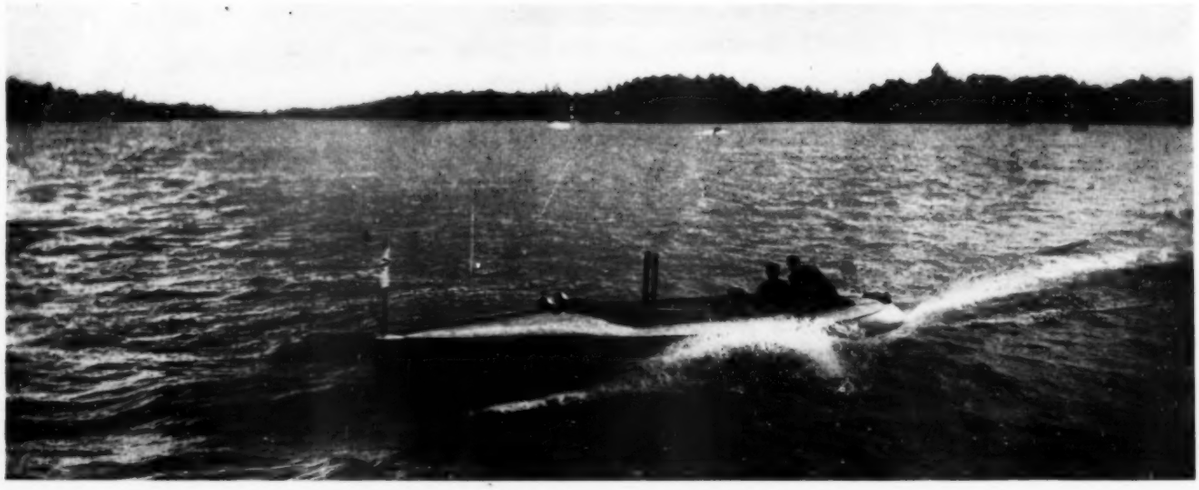
Intense interest was aroused at the publication of the entries when it was found that Courier II, of Buffalo, representing the Motor Boat Club of Buffalo, was numbered among the contestants. This boat had established a reputation for speed and endurance at the Palm Beach races last winter, and was considered a worthy rival of the defender. The start of the first race of the contest, however, found but four entries, Pawnee, owned by J. P. Gillespie and representing the Clayton Yacht Club, having been withdrawn, and the speedy Courier II failing to appear on the river. It was not until the second day of the race that a telegram from the owner of the latter, W. J. Conners, announced that the racer would be unable to compete owing to the fact that she could not be prepared in time.

After the withdrawal of these two boats, the entries consisted of the following:—Dixie II, defending the cup for the Thousand Island Yacht Club; Duquesne, Frontenac Yacht Club; Stranger, Chippewa Bay Yacht Club, and Jan, Gananoque Yacht Club. Only one of these boats, Duquesne, had over 100 horsepower to compete with the 220 of Dixie II, and as the defender's engine worked perfectly throughout all three races, the result was at no time in doubt.

Let it not be supposed, however, that the races were uninteresting, for if perfect management, ideal weather, and smooth and consistent operation of every boat in the race constitute a good contest, this was one of the best. There is nothing more fascinating than the appearance of a graceful racer as she skims over the water at 30 miles an hour throwing out great white-wings of spray on either side, and the spectators of this race, in which not the slightest accident occurred to mar the consistent operation of every entrant, were treated to the sight of a contest which, while not actually thrilling, was at least pleasant to watch.

In each of the three races, all the contestants preferred to try their luck with a flying start, and soon after the warning gun, the four great racers with exhausts roaring, would assemble about half a mile above the line. Coming down at full speed upon the stake boat, and endeavoring to time their arrival so that the starting line would not be crossed until the firing of the final gun, the racers stirred up sufficient interest and excitement among the spectators to keep them through the twenty minutes intervening before the first round had been completed.

In the first day's race, Duquesne crossed the starting line first, and but an instant after the firing of the final gun, followed closely by Jan. Dixie II was under full speed a short distance behind, while Stranger brought up the rear. Before the racers disappeared from view down the channel, Dixie II could be seen closing upon her rivals, and by the time the first circuit had been completed, she led her nearest competitor by one minute and 25 seconds. Duquesne turned

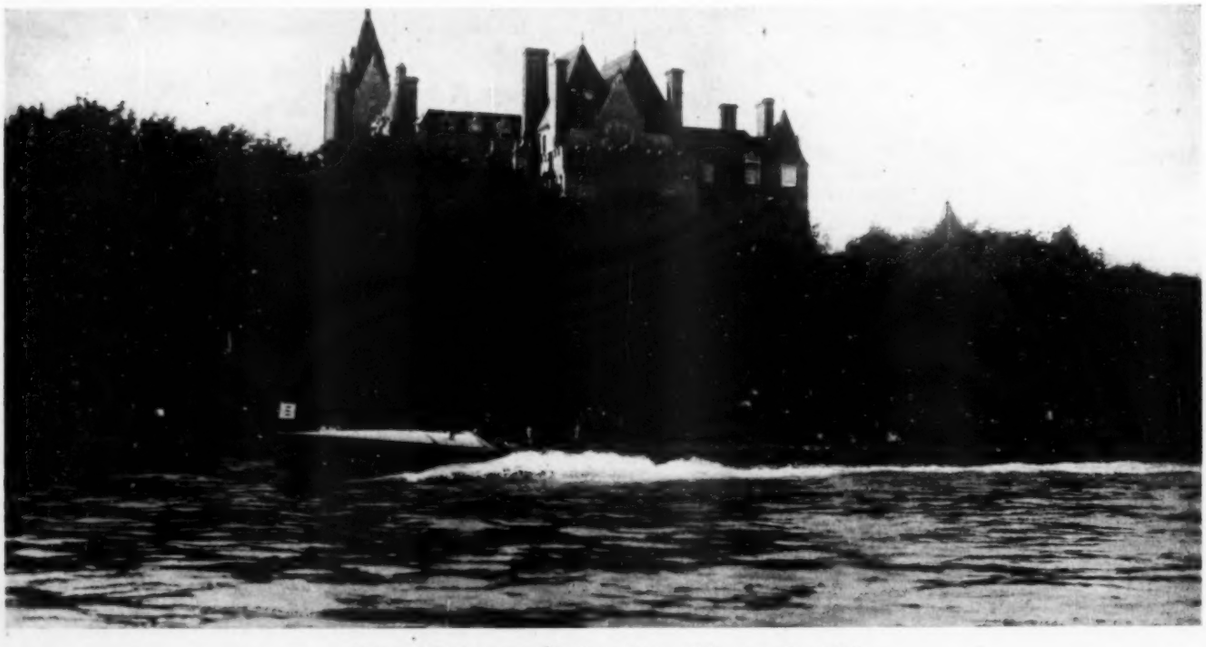


Jan, the smallest of the lot but a most consistent performer.

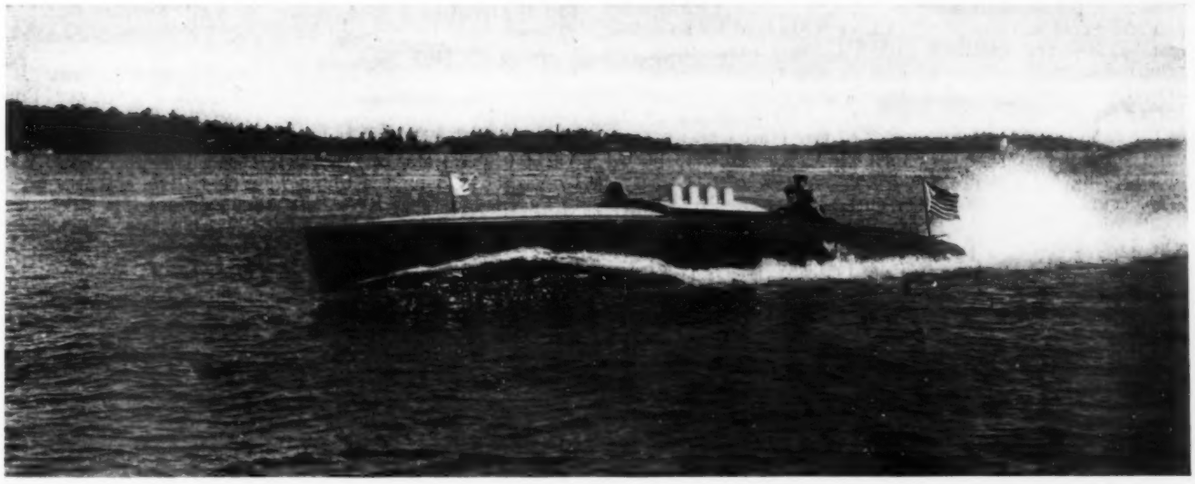
the buoy second, one minute and 30 seconds ahead of Stranger—which, in turn, led Jan by 9 seconds. These same relative positions of the boats were maintained throughout the race, but at the end of the second round, Dixie II had increased her lead over Duquesne by nearly three minutes and finished the day's event one hour three minutes and 56 seconds after the start and five minutes and 24 seconds ahead of the nearest challenger. Jan and Stranger fought a pretty race, the latter finishing the 32 miles but 50 seconds ahead of her rival.

The second day's race was run against a north or up-river wind which succeeded in kicking up a choppy sea against the four mile current of the American channel. While this did not affect the speed of the racers to any material extent, the spectacular effect of the fast-moving boats cutting their way through the dancing water was considerably heightened and furnished a scene picturesque in the extreme. Duquesne crossed the starting line first in this race also, and was quickly followed by Stranger and Jan in the order named. Dixie II brought up the rear, not seeming to care whether she started on time or not. At the end of the first round it seemed to some of the spectators as though she had dallied too long at the start, for she rounded the buoys 25 seconds behind Duquesne, which made the first lap in 22 minutes and one second. Those who considered themselves familiar with the sound of the exhaust of Dixie II, however, averred that she was not "turning up" to her full speed by two or three hundred revolutions a minute, and the judgment of these latter was vindicated when, at the end of the second round, the defender finished 36 seconds ahead of the boat which had previously menaced her. This lead was further increased to one minute and five seconds at the completion of the race. Stranger followed four minutes and 32 seconds later and 58 seconds ahead of Jan which, although the smallest boat in point of power in the race, gave the most consistent exhibition of regularity. At the end of the second race, this boat had made the six laps of 10 2-3 miles each, with a variation of but 30 seconds between her fastest and slowest time. In the third day's race, she bettered her time by 17 seconds, thus bringing her total variation for the nine laps to 47 seconds. Dixie's time in this second day's race was nearly three minutes slower than her performance of the previous day, while Duquesne's was one minute and 25 seconds better.

Although the defender had eight points to her credit at the finish of this race, to the six, four and two of Duquesne, Stranger and Jan, respectively, a mishap in the final day's trial could easily destroy her chances of winning, and in consequence, the third race was as important as either of the other two. That the interest in the race was maintained up to the last moment was evidenced by the fleet of large and small private boats and excursion steamers which thronged the sides of the course on the third day and filled the air with the sound of their whistles and sirens when Dixie II



Stranger, the representative of the Chippewa Bay Club.



Dixie II, Defender of the Gold Cup and holder of a new record.

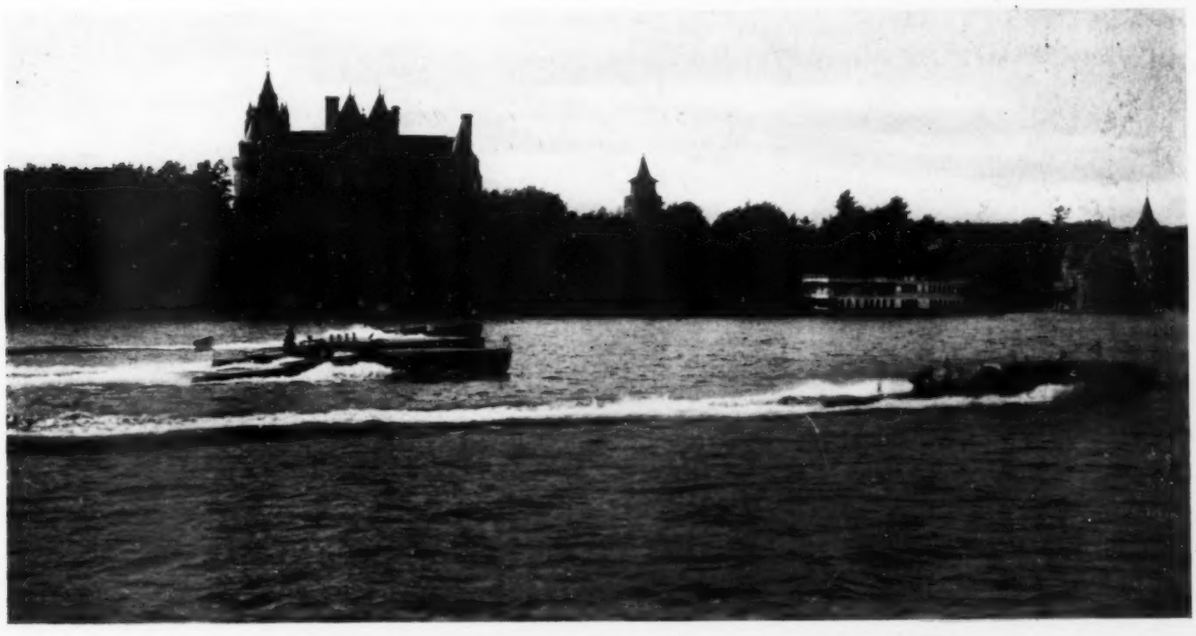
crossed the line and made certain that the cup would be raced for again over this same course in the heart of the Thousand Islands.

As if desiring to show those of her friends who had been rather uneasy during the previous close race with Duquesne that there had been no real danger, Dixie II started on the last day's race on even terms with the other contestants, and helped form one of the prettiest and most perfect starts that has ever been witnessed in a motor boat contest. The four contestants came down toward the start side by side, the engine of each opened up wide. As near as the judges' eyes could make out, the bow of Jan projected about five feet ahead of those of her companions as they crossed the line—but it was certainly not more than that distance. When not ten feet from the starting line the gun boomed, and so perfect a start was it that to many it seemed as though all four boats must be disqualified for crossing the line ahead of time—but they were saved by a mere ten feet of open water. It was a fitting start for a race in which all fresh and salt water records for boats under forty feet in length were to be broken.

This relative position of the racers was not kept up for long, however, and in 20 minutes and 12 seconds after the firing of the starting gun, Dixie II had finished her first lap. This spurt, in which she attained a speed of better than 31 miles per hour, was an indication to the spectators that she was after a record, and this belief was changed to almost a certainty when the champion completed the second lap in 19 minutes and 18 seconds. Not satisfied with this performance, however, and evidently desiring to make assurance doubly sure, she clipped 13 seconds from this record on her third and last round and completed the 10 2-3 miles in 19 minutes and five seconds, or at a rate approximating 33 miles per hour.

At the end of the first round, Dixie's nearest competitor, Duquesne, was two minutes and 18 seconds behind, at the completion of the second lap she was six minutes and 14 seconds behind, and the finish of the race saw Dixie II a winner by nine minutes and 19 seconds. In the meantime, Stranger had been gradually gaining on Duquesne, and had decreased a lead of one minute and six seconds at the end of the second lap to but 21 seconds at the completion of the race. As if the exhibition of Dixie II had imbued them with the spirit of increased speed, both Stranger and Jan completed the third day's race in better time than had marked their performance on either of the two previous contests.

A feature of the conduct of this race, and one which was the cause of favorable comment on all sides, was the manner in which the Federal Government rendered its aid in policing the course. The United States Revenue Cutter Morrill was on hand for four days with its complement of officers and crew, and the military precision with which the course was patrolled, the orders carried out and the motor boats and other small craft kept within the proper confines, contributed in no small measure to the success of the race and the free-



"One of the prettiest and most perfect starts, in a motor boat contest."

dom from the slightest accident. Several of the more speedy pleasure boats were requisitioned, each manned by an officer and "Jacky" and equipped with a U. S. Customs flag, and rendered efficient service in keeping the course clear of all save the contestants. Not only was the flag the sign of authority, but each officer was vested with the right to fine to the extent of $500 the operator of any craft which persistently refused to follow the directions which had been posted in conspicuous places along the shore.

Of course it was out of the question to control the movements of the large lake steamers which frequently pass up and down this channel of the St. Lawrence, but these gave but little trouble, merely serving to delay the start of the third day's race for fifteen minutes while a large freighter from Ogdensburg plowed serenely up the channel. On the afternoon of the second day, a large steam yacht came slowly up the river as Jan was starting on her last lap, causing that racer to make a wide sweep around her bow. But as the direct results of the race were not changed and it was rather difficult for the captain of the yacht to determine at just what point the course crossed his bows, it is not probable that any severe penalty will be inflicted upon the intruder. One of the fleet patrol boats was observed scurrying up the river after the steamer, however, and it is certain that her skipper did not escape without a reprimand.

This is the second year that the Gold Challenge Cup races have been free-for-all events for boats of under forty feet in length, and in consequence, the majority of the boats which contest for this cup are 39 11½ inches long. Since her race of a year ago, when as challenger she wrested the cup from Chip III, the engine of Dixie II has been placed in a new hull of slightly different design from that of last season. The eight cylinders of her engine are arranged in the V-shaped position with reference to each other and are staggered so that the two rows may be brought closer together. The motor is rated at 220 horsepower.

Duquesne is a boat which was scarcely completed in time to enter the cup races last year, and is equipped with an eight-cylinder Jencick engine which is rated at about 200 horsepower.

Stranger was designed by Crane, the designer of Dixie II, and is driven by a four-cylinder S. & M. Simplex motor of 7½-inch bore by 7½-inch stroke.

Jan is equipped with two four-cylinder Haynes automobile engines, rated at 48 horsepower each.

The Gold Challenge Cup of the American Power Boat Association was first competed for in the summer of 1904, and was won by Standard, representing the Columbia Yacht Club. Later in that same season, however, it was won by Vingt-et-Un for the Chippewa Yacht Club, and was taken to the St. Lawrence River. It remained with this last-named club and was successfully defended by Chip I and Chip II for three years. During the fourth year, however, in the races which were held August 20-22, 1908—the first year of the new free-for-all rules—the defender in the form of the famous 12-cylinder Chip III lost to Dixie II, and the results of the contest just closed entitle the Thousand Island Yacht Club to retain the trophy until the next challenge race.

The Gold Cup Races at a Glance.

FIRST DAY, AUGUST 19.

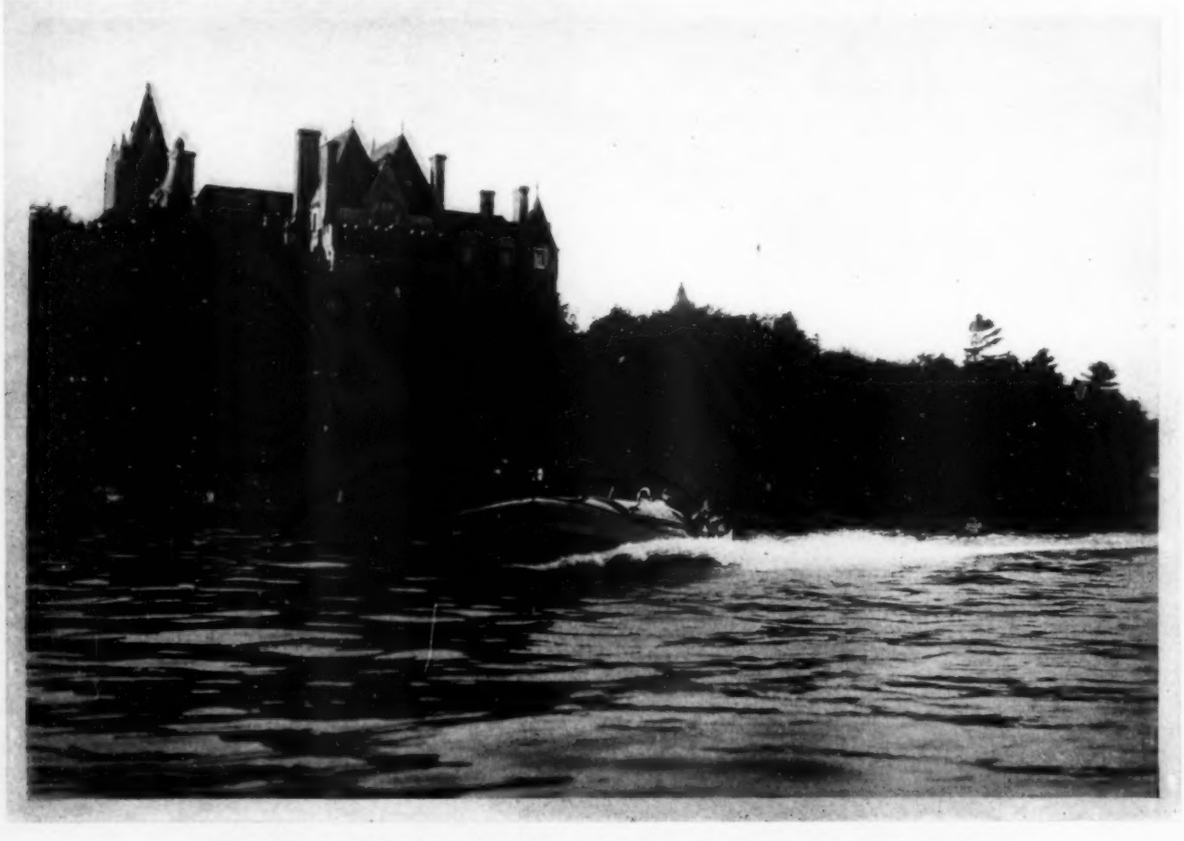
Boat.	*Start.*	*First Round. Time.*	*Second Round. Time.*	*Third Round. Time.*	*Total El'ps'd Time.*	*Points.*	
Dixie II (2) ..	3:30	3:51:16	4:12:43	4:33:56	1:03:56	4	—
Stranger (6) ..		3:54:09	4:18:25	4:42:21	1:12:21	2	—
Duquesne (3)..		3:52:39	4:16:00	4:39:20	1:08:20	3	—
Jan (4)		3:54:18	4:18:55	4:43:11	1:13:11	1	—

SECOND DAY, AUGUST 20.

Dixie II	3:30	3:52:26	4:14:17	4:36:50	1:06:50	4	8
Stranger		3:54:07	4:18:20	4:42:28	1:12:28	2	4
Duquesne		3:52:01	4:14:53	4:37:55	1:07:55	3	6
Jan		3:54:40	4:19:16	4:43:26	1:13:26	1	2

THIRD DAY, AUGUST 21.

Dixie II	3:45	4:05:12	4:24:30	4:43:25	58:25	4	12
Stranger		4:08:12	4:31:50	4:55:05	1:10:05	2	6
Duquesne		4:07:30	4:30:44	4:54:44	1:09:44	3	9
Jan		4:08:53	4:33:26	4:57:40	1:12:40	1	3



Duquesne, the new boat which carried off second honors for the Frontenac Yacht Club.

Running the race to win.—The skippers of Satanita.

The Race Around Lake Ontario.

How Satanita Won the First Long Distance Race in Those Waters. The Successful Contest of the Rochester Y. C.

By Clute E. Noxon.

(Photographs by Levick.)

THE first long distance motor boat race ever held on Lake Ontario which was started on Thursday evening, Aug. 12, and finished between midnight Friday and the early hours of Saturday, under the auspices of the Rochester Yacht Club, was a big success and opened wide the eyes of those who deprecated the venture and predicted disaster to the entries. Just one boat experienced trouble and that was due to a faulty switch on the batteries, and not to engine trouble. It was caused by an innocent-looking ice-box and occurred on the Julugra.

The switch which is located on the inside of the cabin bulkhead was affected by the sudden slamming of the ice-box door which is built in the cockpit on the outside of the bulkhead and the engine deprived of the necessary spark, promptly quit business. An hour and a half was lost, as the real cause could not be located, the engineers pawing all over the machinery instead of examining the ignition system. The engine sprang into life a couple of times and chugged along a few miles, but the spring in the switch had become loosened and the real difficulty was not discovered until valuable time had been lost and made the Julugra's position as the last boat a certainty. It was a laughable incident to the crews of the other boats when they heard of it after the race, but those on board the crippled craft did not relish the occurrence one little bit.

Throughout the entire race of 290 miles (and a good 300 was covered on the trip) the seven motors ran smoothly and satisfactory. The San Souci was delayed several hours at the start by reason of a bad mixture, dirt and water playing havoc with the working of the carbureter. This ruined the chances of the scratch boat, and in the light of the figures shown in the table, she was not so badly handicapped but that she stood an excellent chance of winning as she can strike an average of from fifteen to eighteen miles when in good form.

Commodore Thos. B. Pritchard's Satanita, of the Rochester Yacht Club, was the winner of the race, averaging 10.6 miles for the distance. She was the largest boat in the fleet measuring 60 ft. over all and twelve feet beam. She is equipped with a 50 horse-power two-cylinder Standard engine and kept steadily to her gait all around the course. She saved her time over the little Virginia, a twenty-five footer, by a flat ten minutes.

Satanita was not considered a dangerous factor at any time before the ratings were ascertained, as she is a big bodied boat with but medium power for her size and her speed was not counted sufficient to drive her home in time to overcome the big handicap she would be under. But to the surprise of all she rated lower than even her owners had guessed, her big midship section reducing it almost to an equivalent with the 35 and 40 foot boats, Helen and Klatawa, even going several points above her.

The race was run under fair weather conditions. There was a dead roll at the start, and the stragglers found a good lump of a sea on the dash from Cape Vincent to the finish, but nothing of a trying nature was encountered on the jaunt by any of the racers.

There was considerable delay in measuring the boats, and the posting of ratings and time allowances was not done until after the race was started. However, no protest was lodged with the Regatta Committee as to the start and none of the contestants knew where they stood until after the finish. Of course there was grumbling and disappointment on the part of those who had received a higher rating than anticipated. W. J. Graham, captain of the Virginia, who had lost the race by ten minutes, protested the winner Satanita on the ground

Relieved at the wheel to steal a little sleep.

that she was three or four inches in excess of sixty feet over all length and that her midship section had been obtained from plans, but the Regatta Committee rejected this protest as the excess length had no bearing on her actual speed or rating, and the drawings were considered satisfactory.

There was a fair sized crowd on the piers when the start was made at 7:30 P. M., Thursday, Aug. 12th. The line was made from the East pier to a buoy anchored 500 yards to the N. E. The time gun was sounded at 7 P. M., and all but Sans Souci ran slowly down the river for the manoeuvre before the start which was made flying. Entries were as follows:

Boat.	Owner.	L.O.A.	Motor.	H. P.
Satanita	Thos. P. Pritchard, Rochester	60 ft.	Standard	50
San Souci	F. A. Brownell, Rochester	45	Brownell	75
Helen	C. M. Zaring, Gananoque, Ont.	35	Palmer	25
Klatawa	F. J. Phelan, Toronto	43	Hunter	25
Marietta	A. A. French, Buffalo	40	Lamb	35
Virigina	W. J. Graham, Rochester	25	Rochester	16
Julugra	F. A. Mabbett, Rochester	35	Ferro	25

The preparatory gun was fired at 7:20 P. M., and the boats moved up close to the line, some of them lying just below with the clutch off. It was a quiet night with a faint breeze and a rolling sea that had been kicked up by a three days' nor'easter. It had knocked down considerably in the afternoon and by the time of the start there was not enough swell to affect the racers materially.

The boom of the starting gun at 7:30 sharp spurred everyone to action, the Julugra sweeping across the line first five second after gunfire. Klatawa was but a few seconds behind her, and the Helen and Viriginia followed in quick succession. Satanita and Marietta had been holding pretty well astern of the others, but when their engines began to throb at full speed they lost no time in hauling down the leaders. Satanita mauled her way through the fleet at an eleven mile clip and soon had a commanding lead, although the crafty pilot of Klatawa swung in behind her and sailed for some time in the suction. Satanita had a little difficulty in shaking this Indian off, but finally drew away and soon lost sight of her rivals as the gathering darkness closed in.

The race was run under fair weather conditions.

Marietta passed Julugra and Virginia with ease, but in Helen she found a worthy rival as the Gananaque boat was tearing along at a swift pace and giving the big Klatawa a hard run for second position.

Virginia stuck close to the shore line for smooth water, as an off shore breeze was picking up, her light draft enabling her to negotiate the shoal spots in safety. She and Julugra kept nose and nose all the way to the Braddock Light, ten miles from the start, when the smaller boat forged ahead and caught Marietta, both of them turning the Oak Orchard buoy at exactly the same time. This was thirty-two miles west of the starting line and was rounded as follows:

Satanita	10:32 P. M.	Virginia	11:14 P. M.
Helen	11:02 "	Marietta	11:14 "
Klatawa	11:11 "	Julugra	11:21 "

San Souci, owing to her carbureter trouble, did not arrive at this mark until 3:30 in the morning and laid over three hours to put on some stores before crossing the lake.

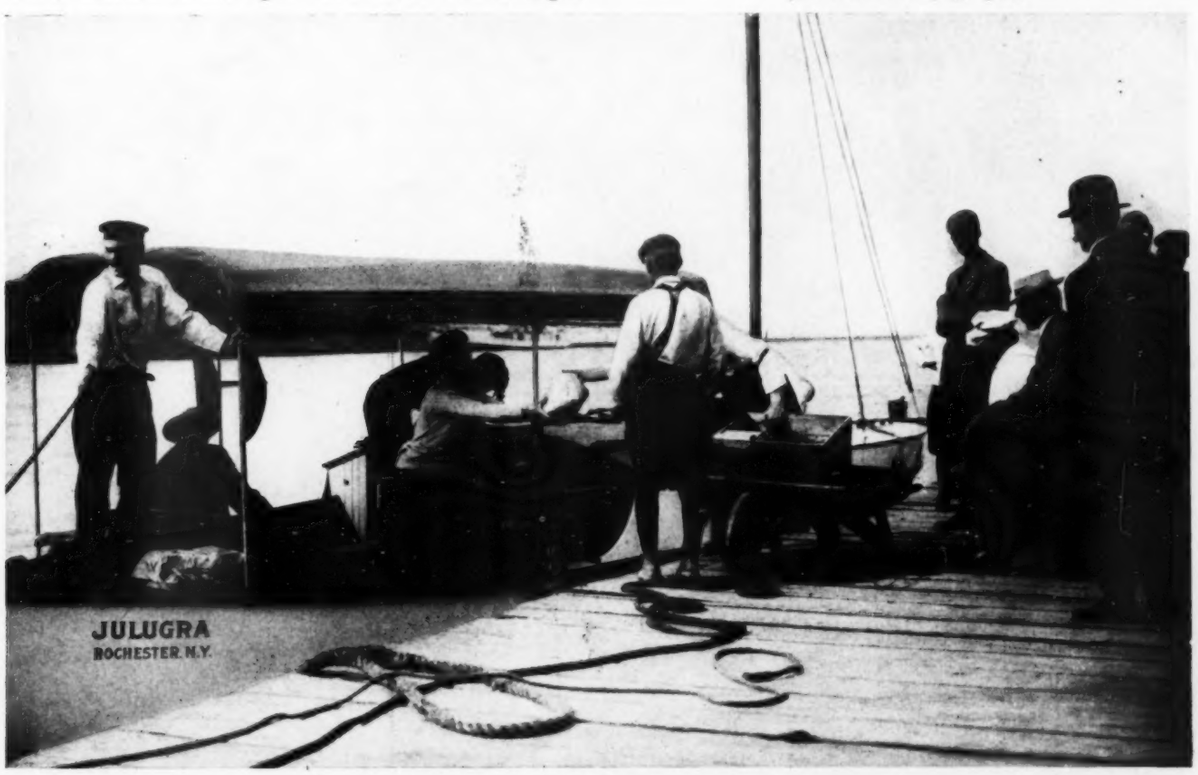
The stars were showing, but dimly, as the boats brushed out into the lake for Presque Isle, 54 miles away N. E. ½ E., compasses on nearly every craft were behaving badly. The wheelman's compass on Julugra was perched on a galvanized iron gasoline tank, which of course made the card dance a jig at times. Another one was lashed amidships by the cabin skylight and all night long the man stationed here was kept busy verifying the course with the man at the wheel.

This double compass system was productive of no little amusement as it seemed afterward, but when one is out racing and trying one's level best to win a race by holding to a straight course, it is no cause for exuberant hilarity to have one hard working compass straining and striving to carry you to the goal while the other is religiously bent on zigzagging you all over the lake. It's worse than slamming an ice-box door.

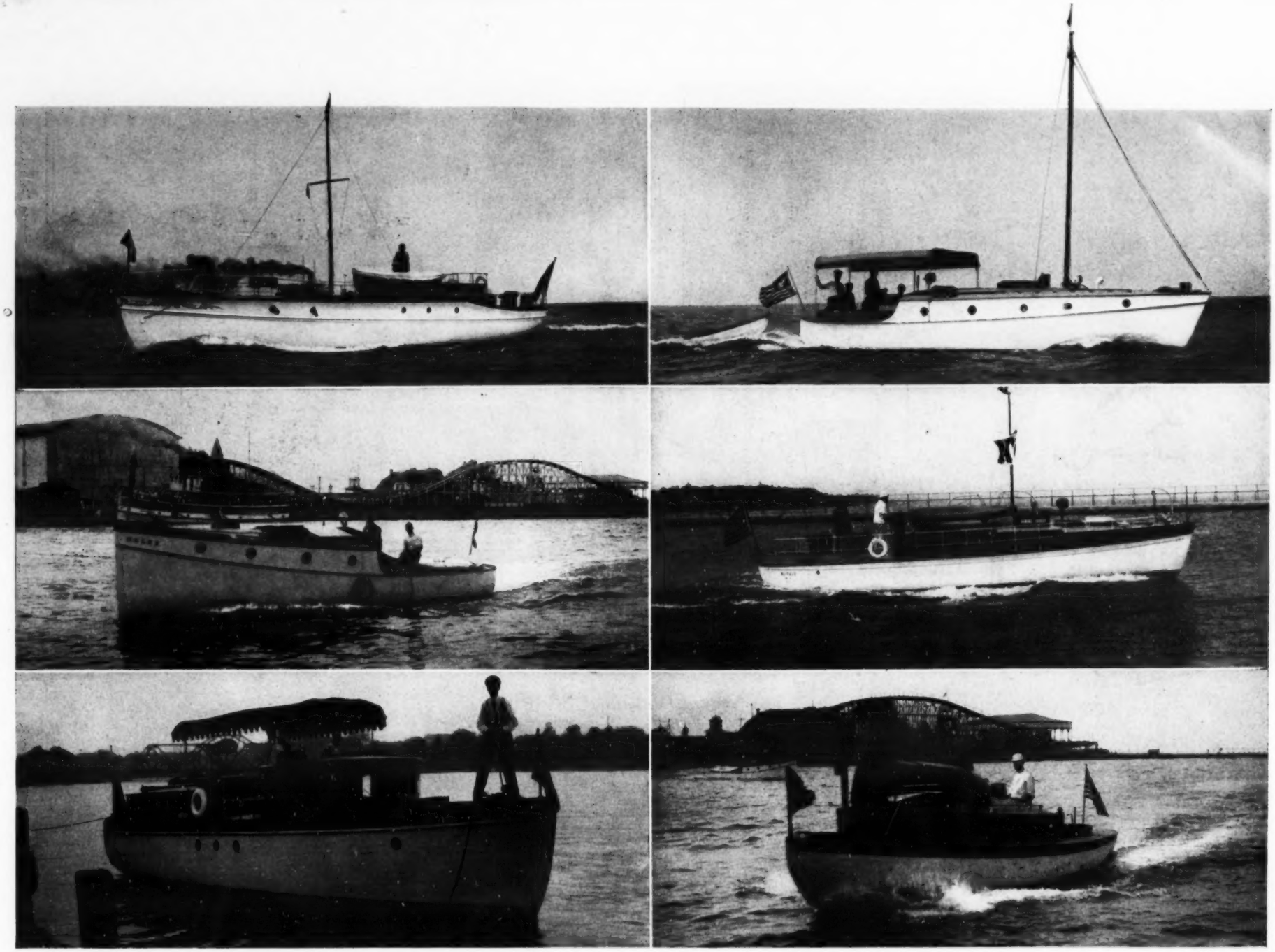
Up to take a look around.

Klatawa, Marietta and Virginia all went wide on their reckoning on the run to Presque Isle, as when Julugra was working in about five o'clock A. M. they could be seen off to the eastward of the light. The Scotch Bonnet Light, fifteen miles east of Presque Isle, had lured them off their course. Julugra made a hard fight to head them off at the entrance to the bay, but they were too speedy and passed in

(*Continued on page* 54.)



Taking aboard the grub.



The boats that raced around Lake Ontario.

Above at left and right we have Satanita, the winner, and Julugra; in the center Helen and Marietta, and below Klatawa and Virginia, the smallest boat in the race. San Souci was the seventh starter.

Some use rods while others use hand lines.

Motor Boating for Weakfish.

The Advantages of the Motor Craft for Him Who Would A-fishing Go. How to Catch Mr. Silver Sides, and a Word on His Peculiarities.

By Louis Rhead.

Photographs by A. B. Bogart

IN chumming for weakfish the motor boat has many advantages over a sail or rowboat, and while there are some disadvantages, these are not so serious but that they may be overcome by the use of care and judgment. Weakfish are exceedingly shy and very susceptible to movements and disturbances in the water. They will rarely come near the chumming unless everything be quiet and still, and the entire school will dart away from even a plentiful supply of food if alarmed. Of course, a smart motor boatman can slide up to the desired spot easily without a ripple or a sound, drop his anchor, prepare his tackle and be ready for the fray when the fish come skimming along the surface past his bait. If he is familiar with the precise period of the tide when the fish are on the feed in a given spot, he may time himself to get there to a few minutes and avoid waiting, no matter whether the wind or tide may be favorable or otherwise.

The rowboat angler, on the contrary, if forced to go some distance, has to go out with the ebbing tide or pull hard against the incoming tide and we all know what that means, especially if the wind and tide are both adverse. A sailboat I consider a positive nuisance both to the owner and everybody else in any kind of bay fishing. The ablest skipper cannot anchor in a smart wind and swift tide without a lot of monkeying around to the disgust of everybody in sight, for, be it known, chummers will insist upon fishing together in a bunch. I fail to see the wisdom of this, yet I always join the crowd. Experts and old veteran baymen can almost smell a live fish in the water, as well as see it, whereas the keenest senses of a novice is but a blank. This seems strange, but, as in everything else, experience makes fools wise and the angler is a fool not to make the best of his experience and use it with wisdom. I have seen two experts in a motor boat take over a hundred fish in one hour with a crowd of other boats around them getting nothing. The way they did it was to anchor in the right spot, draw the fish near by careful chumming and after that keep them there, fish carefully with fine tackle, and land their catch in a scientific way with a net, making all the other fishermen feel sick with envy.

The writer has been an ardent angler for over a quarter of a century, only taking up sea fishing in the last few years, but he was quick to see that the weakfish is a game fish of no mean order and was one of the first to advocate fine tackle to capture it. Some anglers will claim that no more fish are now caught with fine tackle than there were in the old days of coarse lines and big hooks but it is a question, because there are now a great many more fishermen and the water is very much more disturbed than formerly. Certainly, the average catch by expert or tyros is not so steadily productive or so large in numbers or size. This season, so far, has been exceedingly variable; one day plenty of fish and the next day few or none. I do not attribute this to the disturbance of the water by a multitude of anglers, but rather to the fact that weakfish in searching for their food vary the bay visits by stays in the coastal waters of the open sea to feed on the young small fishes which swarm near the shore. For that reason, anglers will benefit by using live shrimps as chum instead of chopping them. It is a truism that fish live solely to eat; where they get the most food there they are sure to be.

While a motor boat cannot be stopped as suddenly as a motor car, it is astonishing with what complete control a good boat is started, turned and stopped, considering the heavy resistance of the water, and in this control when fishing lies the secret of a successful catch. It also rides well at anchor and is not blown from side to side like a cork by the wind; furthermore, it gets along quickly without any bother or fuss, and should the fishing be poor in one place, it easily takes you to a better one.

It is always wise to have both bait and tackle ready for business on arrival at the fishing grounds, so we start the boat thus prepared, and ride smoothly on until very near the chosen

Just waiting for bites.

spot, then slow down. In most places, weakfish begin to bite on the second half of the flood tide, but in some shallow waters they bite best on the first of the ebb tide. If outside a channel the first half of the flood tide is best, while well inside they begin biting when the tide is half up and continue on until half ebb. Great importance lies in attention to the stages of the tide.

Upon your arrival, it is likely you will find other boats already on the ground so that a quick glance will tell you just the place where the anchor should be lowered, and this should be done with dispatch and silence. Your neighbors will quickly size up your ability as a weakfisherman according to the way this action is performed. If you pitch the anchor out fifteen feet from the boat with a terrific splash, they will wish you in a place where water is scarce; but if you drop your anchor down so quietly that they are unaware when it is fixed in the sand, they cease frowning and become absorbed in their sport. If the boat contains two anglers, each one uses a single rod and they seat themselves side by side near the stern with the bait can in front convenient to both, likewise the net and surplus tackle. If only one angler is in the boat he may perhaps choose to use two rods or one rod and a hand line, though the former is more easily handled.

The standard weakfish rods vary in length and weight according to individual tastes; some like a long pliable seven-foot, six-inch rod, others like to use a short stiff rod about five feet long. I use a six-foot, four-inch rod, with a cork grip, as cord or cane grips are inferior to cork in salt water fishing. For general salt water fishing it seems to me that steel rods are best. They are light, compact, strong and powerful and I should like to hook the weakfish which would break one of them. The reel should be a good multiplier capable of carrying a hundred yards of best Cuttyhunk, Swastika brand line—No. 6 or 9 thread, according to the weight of fish being taken. To the line, attached by a light swivel, is a six-foot, single gut black bass leader, with No. 1 or No. 2 Carlisle or Aberdeen hooks, tied on snells of the same quality and fineness as the leader. If two hooks are placed on the leader, the largest size, No. 1, should be at the end, and the No. 2 three feet above it. It is not often doubles are caught, and when they are, it is usual for the end bait to be taken first and while the fish runs carrying along the second hook, a second fish strives to gain what it imagines the first fish to be after, thus getting hooked like the first.

As soon as the expectant fisherman is snugly fixed, say three

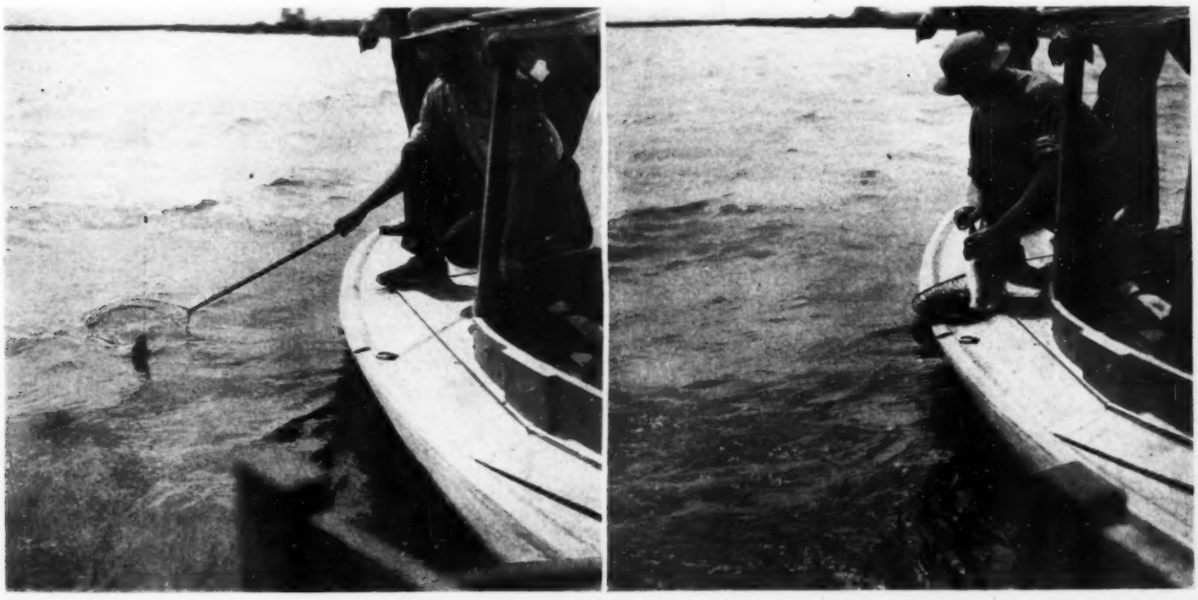
A fish in the hand is worth a school in the water.

The bayman in his "sneak-box."

Cleaning 'em when we get home.

hours before flood tide, he seats himself at the stern of the boat with the tide sweeping behind, then casting forth his line, allows it to run a hundred feet away to float on the surface. The hook is baited with a live, fat shrimp or two smaller ones, though a single big one is best, because with a light hook and not impeded by a heavy pearl squid, it can swim with ease and freedom. No chumming is done until after the first strike, because it is a sheer waste to chum, if the fish are not there. It often happens that weakfish are running below the surface, therefore it is wise to have a little lead on one of the lines to convey the bait to about midwater, though weakfish can easily see bait at the surface even when swimming at the bottom. Immediately the fish strikes, raise the tip of the rod smoothly and quickly, not a yank that rips out the hook, for the name of the weakfish is derived from the weakness and tenderness of the mouth. Keep a taut line, then throw some chum in the water at each side of the boat, so that the rest of the fish, which are sure to be close by, may be detained while you are reeling in the captive. They gobble up the chum and wait for more. By that time your second line has been struck by another fish and quick work is required. Keep on chumming prudently all the while you are getting the fish aboard and lose no time in so doing; have the net ready, place it well underneath the fish and scoop it in, extract the hook, rebait, cast off and then attend to the other fish with the utmost dispatch. To do this well requires cool, calm, deliberate action, and is only done by those expert at the game. A large part of the fish which get off are lost when the line is slack, or by attempting to lift the fish by its own weight from the water without a net.

To those unfamiliar with fishing terms, an explanation of chum or chumming may be of interest. Chum is ground up or chopped fish or shrimps. Within the last few years, anglers have found this disagreeable work much simplified by using the regular kitchen meat grinder or chopper, having it fastened by screws to the edge of the boat, or on the seat. The best material for chum is the mossbunker, or menhaden, a small species of herring, not generally considered an edible fish, though consumed in vast quantities by blue fish, weakfish, striped bass and other game fish. The mossbunker is an oily fish, and when chopped fine, it is scattered on the surface to attract by its strong odor various game fish to stay round the boat while fishing. Other fish used as chum are snappers, herring, mussels and clams, all chopped to a fine pulpy mass, though none are so effective as the mossbunker. Anglers used to chop shrimps in the same manner, but experts have lately found that chumming with live shrimps gives better results. When the fish is chopped by the machine it is placed in a bucket



Netting the fish and taking him off the hook.

or other receptacle, then small handsful are thrown out, not too often, but at regular intervals. It is always wise to chum while fish are taking the bait and being brought to the net, so that in the interval of time when the line and bait is not out in the water, weakfish may be kept busy feeding till the bait is again cast forth.

So long as the fish respond, keep feeding the chum. After a time there will be a respite, a lull of bites for perhaps twenty minutes and in all probability the remainder of the school has departed. Another school may then come along in search of food, the same as the previous one, and they, too, see your bait and go for it in a like manner. Of course, during the intervals in biting, if you have a plentiful supply of chum, there is often a great advantage in generous chumming; it may be wasted, it may get some isolated fish or it may possibly attract a school from some considerable distance which would otherwise pass by and not see one or two single shrimps upon the surface. A school of weakfish numbers from two thousand to six thousand fish, which are the adults of the spawn of one single fish, generally keeping together from the time they are very young until old enough to spawn. After that period they isolate themselves and make the open sea their fishing grounds, running into the surf for food and are then known as "tide runners." These larger fish are often caught by trolling from a motor boat just outside the surf, and the bait used is half a shedder crab, or a small menhaden. Sometimes the menhaden is cut in the shape of a spearing or killie fish, both sides of the flesh being hooked together so that the outside of the bait shows only a silvery skin. It is only on very rare occasions that a fish over six pounds weight is captured in bays when chumming is the method used and the big fish are more likely to be attracted by a bloodworm or live killie for bait in the bays or surf. This is accounted for by the fact that mature fish feed less on shrimps but more on fish food, the young of their own and other species.

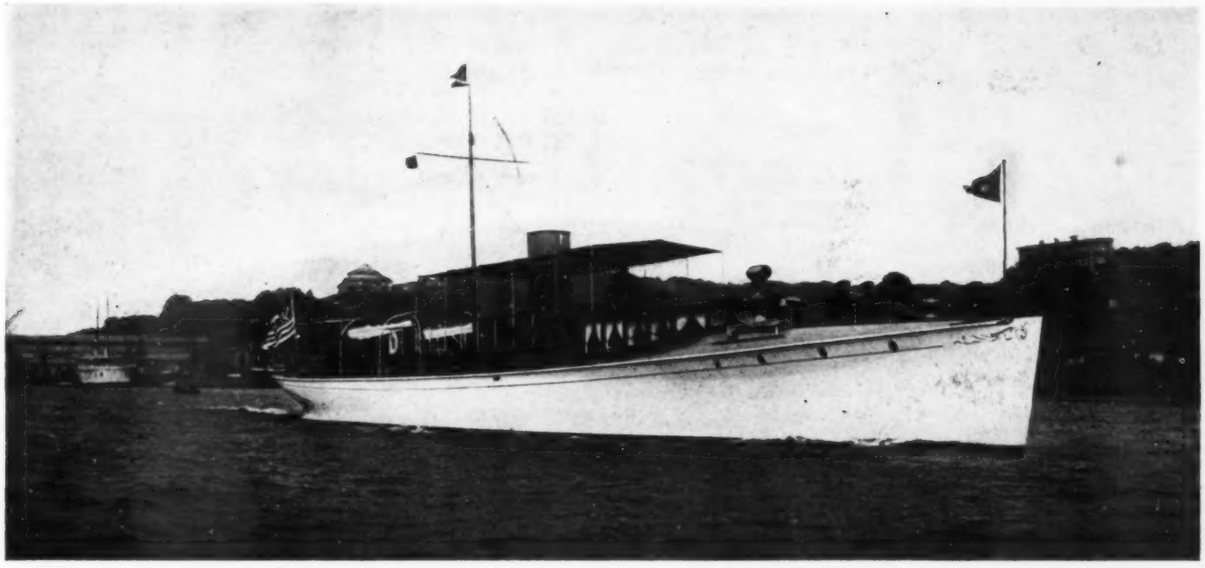
There is another species of weakfish called the Southern sea trout which is so much like the weakfish that anglers call it the spotted weakfish. Both varieties shoal together, though the spotted weakfish is not so common as the other. As a game fish it is fully equal to the weakfish, biting, as it does, more freely. It grows to a large size, sometimes up to twenty pounds weight. Shedder crab never fails to lure them, if they are around, for they seem to have a special weakness for it. During late August, September and October they are most common. If the angler should catch a sea trout he will be able to distinguish it from the weakfish by numerous jet black dots about the size of a pea sprinkled all over its body, including the dorsal fin and tail, while its silvery gray back and sides are of a bluish tint which shines like burnished steel, and its belly and lower fins are white without the yellow tinge so distinctive of the weakfish. Its meat is also finer, the flakes being closer and more compact.

In angling for weakfish the most important thing is to work hard while they are biting, for with plenty of chum they come around the boat in large numbers, stay there and keep biting unless frightened until the turn of the tide, when the tackle may be gathered together and preparations made for the return home. It is not the slightest use to go on fishing when the fish have dropped down to deep water or gone back to the sea. Then the sport ends.

There are numerous places in the vicinity of New York where good weakfish may be had during its season, among them being Jamaica and Flatlands Bay, Staten Island waters, and in the neighborhood of City and Hart Islands. Above New York weakfish are very plentiful as far north as Portland, Maine, also south of New York along the Jersey shore. They run from Florida up the coast, and the later in the season the farther north they go.

When first taken from the water, weaks are extremely handsome in form and color. They are much finer food fish when freshly caught, indeed both weaks and blues lose that fine flavor within a few hours after their demise. Neither of these fish are fit to eat 48 hours after their capture, because, like trout, their thin skins are little or no protection for the flesh. For that reason if the motor boatman wishes to convey them to his home—he should place them together in an empty box and put some eel grass or sea weed over them and place them in a cool shady place till he arrives at the dock. The fish should then be wrapped in seaweed and covered over with a newspaper, and then again wrapped in brown paper or cloth. In that way the paper keeps the air from the fish and the seaweed gives it salt. Fish should not be cleaned and opened until needed for cooking, because the flesh begins to rot as soon as it is cut open. I know this is a common practice among anglers, but it is wrong. Fish dealers never clean fish till sold; they place them as received, on ice.

To prove it's easy when you know how.



Whirlwind leaving the builders' yard at Morris Heights, New York City.

Whirlwind—An Interesting Boat.

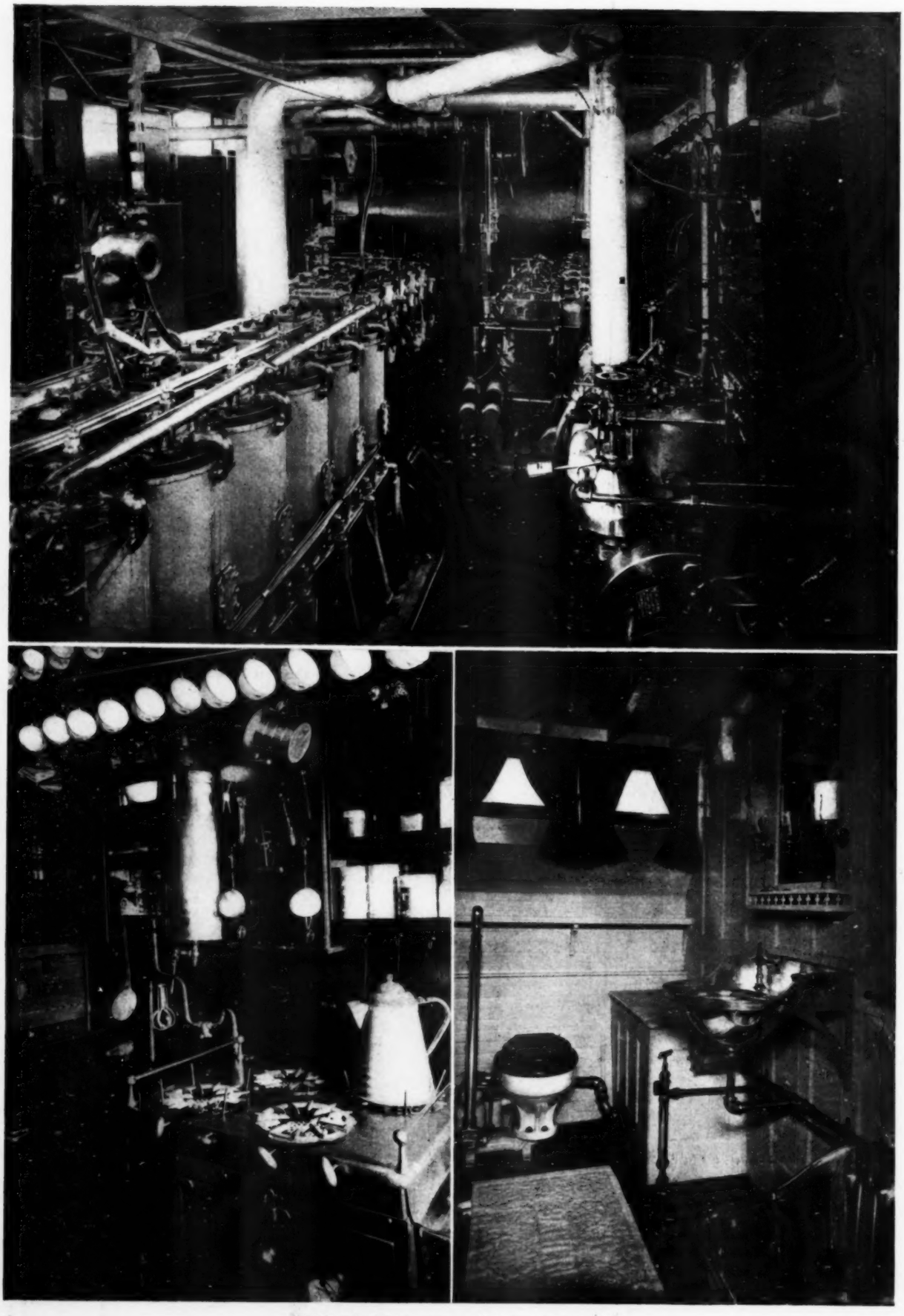
Photographs by Levick.

THE most interesting motor boat of the present season is the Whirlwind, the high speed triple screw cruiser built for Julius Fleischmann, of the New York Yacht Club, by the Gas Engine and Power Company, and Charles L. Seabury & Co., Consolidated, of Morris Heights, New York City, from the designs of Mr. Seabury. A speed of 26 miles an hour was guaranteed by the builders and has been accomplished by this boat, and it has shown an ability to maintain high speed upon long runs of several hours' duration. On the day previous to the Harvard and Yale boat race the Whirlwind made the run of 122 miles from the New York Yacht Club anchorage at the foot of East 26th Street, New York, to New London, in four hours and fifty minutes, which is at the rate of about 21 miles an hour and is said to be a record for the run between these two points. This performance is the more remarkable in view of the fact that the boat had been received from the builders only a day or two previous. It is the belief of the designer and the builders of the Whirlwind that this boat will prove the forerunner of a large and notable fleet of high-speed gasoline cruisers of more than 100 feet in length and capable of a speed up to 26 or even 28 miles an hour. Very high powered motor installations of course are necessary in such craft, the Whirlwind with 111 feet of length, requiring more than 600 h. p., but progress in motor construction has advanced to such a point that these large motors present no difficulties in either construction or operation.

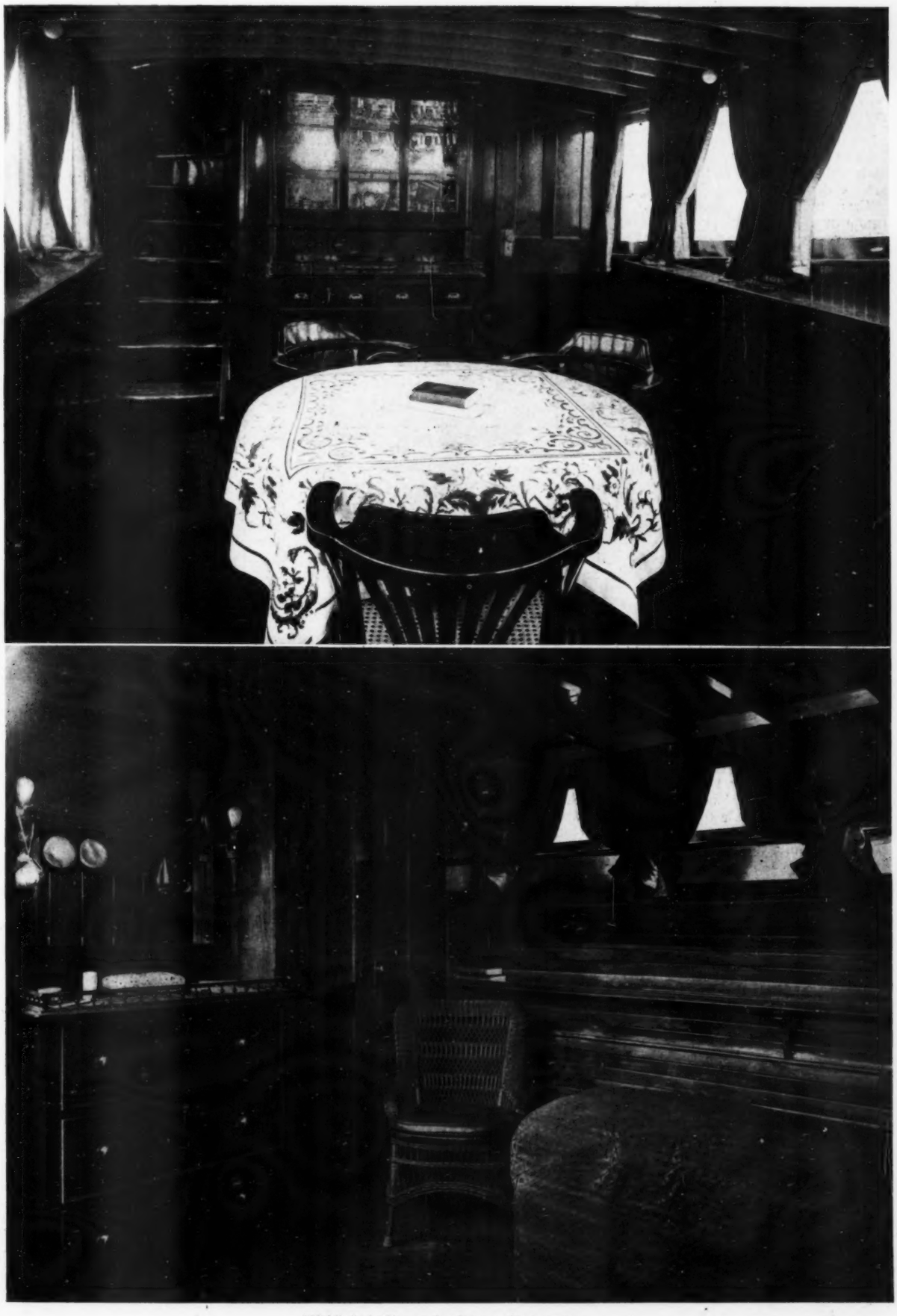
While the large size of the Whirlwind's motors and their arrangement in the engine-room in consequence of the triple screw construction requires a larger engine-room space than would be necessary otherwise, there has been no marked sacrifice of accommodations. Two staterooms of good size extending the whole width of the vessel and with a dressing-room between, comprise the owner's quarters aft, while forward on the upper deck is a large saloon, which although primarily intended for day use and as a dining-room, has a double Pullman berth upon either side, giving sleeping accommodations for four persons. The crew's quarters are located forward, extending aft under the saloon and contain pipe berths for eight men. Access is by a hatch from the forward deck or a passage from the engine-room.

The ample deck room is a pleasing feature.

A pleasing feature of the Whirlwind is the ample deck room afforded by the top of the long cabin house. This is surrounded by a railing, covered with an awning and, as the illustration shows, is attractively and comfortably furnished with wicker chairs and settees with leather cushions. A wide cushion upon the top of the cabin skylight converts



Whirlwind—Motor room, galley and bath room.



Whirlwind—Forward saloon and stateroom.

this into an unsually large and comfortable divan. Should the main deck be too breezy, there is the after cockpit which is quite as comfortably furnished with wicker chairs with crimson leather cushions and carpet of a color to correspond. Besides the chairs there is a wide upholstered seat at the after end of the cockpit.

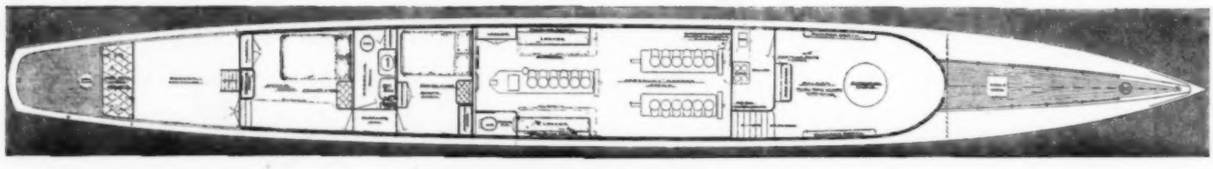
From the cockpit a companionway upon the port side gives access to the after stateroom which is finished in butternut with green carpet, upholstery and hangings. This room contains an extension divan, a wardrobe and a dresser. It may be divided by means of curtains to allow a passage to the dressing-room and the owner's room which are located forward of it. The dressing-room and bathroom is finished in white enamel and contains an aluminum bath tub in addition to the usual appliances. Then comes the owner's stateroom, finished in white enamel with green carpet and upholstering and furnished in a manner similar to the other stateroom except that it contains a double iron bed.

The after cockpit is comfortably furnished.

The motor-room, which occupies the midship part of the boat, is reached by a hatch from the main deck and also has a passage beneath the saloon to the forecastle, as has been mentioned. In its forward part are located, side by side, two of the three six-cylinder Speedway motors comprising the power equipment of the boat, while the third occupies a central position in the after part of the room. All three motors are of the same size, with cylinders 8½ inches bore and 10 inches stroke, developing upward of 200 h. p. at 650 revolutions per minute. The forward, or port and starboard, motors are both started and reversed by compressed air, but the after motor, while air starting, is not air reversing, but it fitted with a reversing clutch. This is for convenience in passing through canals or other places where considerable manouvering is required. In such cases the two forward motors can be entirely disconnected and only the after motor used. There is also a difference between the after motor and the forward pair in the matter of ignition, as the forward motors are equipped with Bosch magnetic plugs and low tension magnetos, while the after engine has in addition a high tension magneto with jump spark plugs. Lubrication in each case is by a McCord force feed oiler. The air intake is heated by the exhaust and the exhaust pipe is waterjacketed all the way to the muffler, which is located in the stack.

In addition to the three large motors there is a separate 12 h. p. engine which operates the pumps, air compressor and electric lighting generator, with which it is directly coupled. The generator supplies current to thirty electric lights throughout the boat and a powerful searchlight. Each motor is also provided with a separate air compressor, which may be used in case of accident to the auxiliary outfit. The compressed air supply is carried in two tanks located upon the forward bulkhead which will hold a pressure up to 150 lbs. The fuel tanks have a capacity of 2,000 gallons, 1,200 in the forward tank and 800 in the after tank. Gauges in the engine-room show the exact amount of gasoline in each tank at all times. The feed to the motors is by a pump with return for the overflow. Lubricating oil is kept in a tank which is located in a corner of the engine-room and holds 2½ barrels.

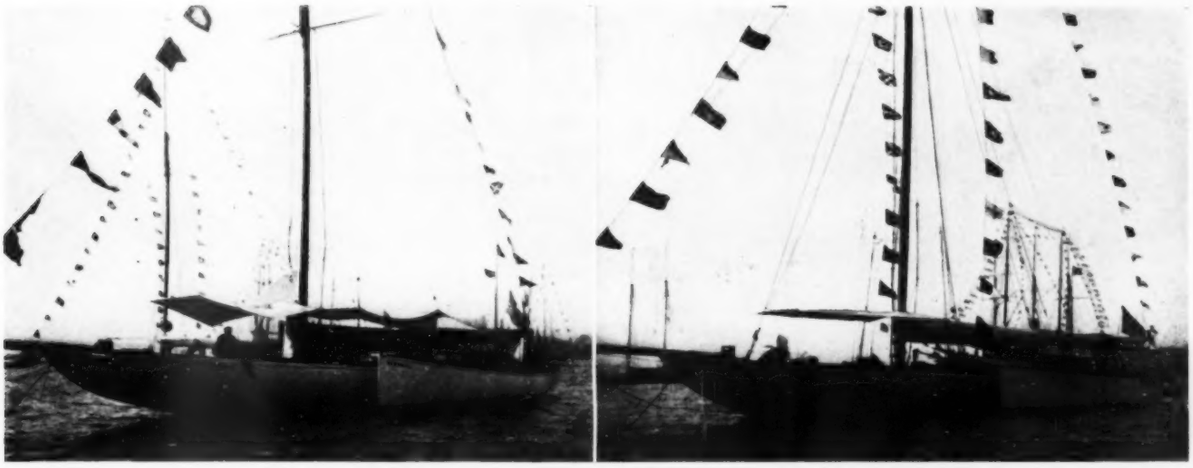
The pumping system of the Whirlwind is worthy of notice because of its completeness and effectiveness. Four separate connections are operated, one to each of the four watertight compartments into which the boat is divided. All these are of large capacity and are open at the ends, no strainers being fitted. Instead there is a catch basin in the engine-room through which the water pumped from any compartment passes and which catches any matter which may enter the pipe. This basin can be opened and cleaned, in case of any stoppage, much more readily than the inlets in the various compartments could be freed. In case an obstruction occurs, which will not pass through the pipes to the catch basin, the hose from the compressed air tanks may be connected and the obstruction blown out.



Accommodation plan of Whirlwind.

The crew's quarters are located forward.

The Whirlwind is steered from a bridge on the main deck just aft of the forward saloon. Here are located the steering-wheel and three engine-room telegraphs, one for each motor. Each of the three telegraphs is provided with a return indicator by means of which the engineer repeats to the captain every message received by him, thus enabling the captain to know not only that his instructions are received by the engineer but that they are understood by him.



Sloops Altair and Istalena with motor boat tenders Sea Shell and Heralda alongside.

Motors on the N. Y. Y. C. Cruise.

The Motor Yachts and Tenders which Accompanied the Big Fleet. A Special Class for Gasoline Auxiliaries.

By Capt. J. C. Summers.

(Photographs by Levick.)

JUST a few years ago—fifteen at the most—if you or any other yachtsman had ventured to predict that coal as a fuel for steam yachts would be supplanted by electrically ignited gasoline, or by naphtha or kerosene, you would have been regarded—by the majority of laymen, at least—as a fit candidate for Bloomingdale or Matteawan.

To-day the theory that coal is the only fit fuel has been capsized—turned turtle so to speak—and the man who doubts the efficiency of the gasoline motor would not only be dubbed a pessimist of the rankest calibre, but his sanity might also be questioned.

No better illustration of the growing sphere of motor boats is needed than reference to the fact that ten years ago there was not a single motor boat enrolled in the fleet of the New York Yacht Club. It will doubtless be news to many of its members to-day, and others will be amazed to know that in this year's club book there appear the names, owners and dimensions of 223 yachts whose engines are driven by gasoline or its equivalent. This means that out of a total of 643 yachts enrolled in the club, more than a third of them are power boats not propelled by steam.

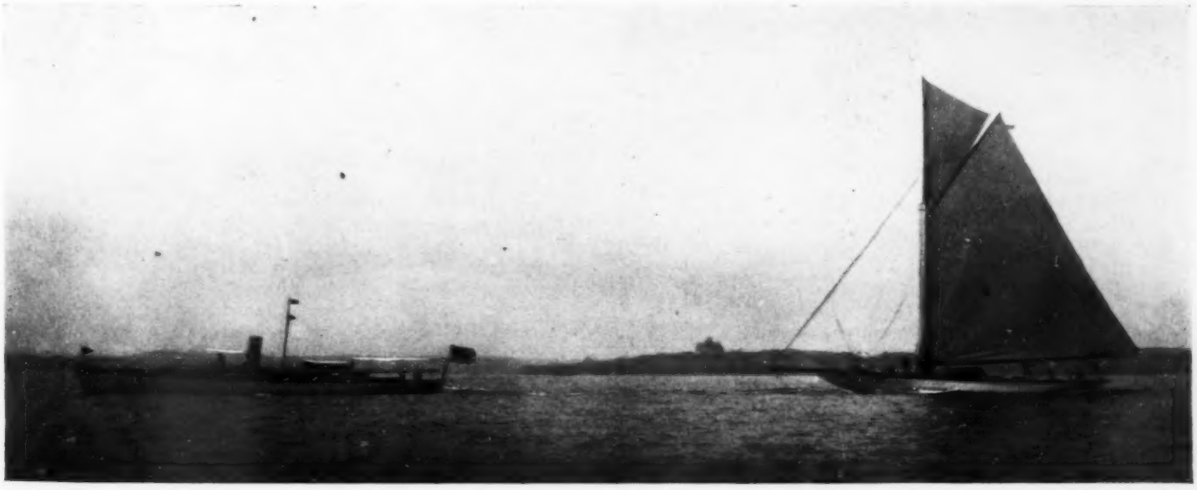
These uncontroverted facts and others, which are amply backed by figures, show the remarkably rapid strides that have been made in this industry by engineers and students of the internal combustion engine.

We have invited the nations of the earth to unite with us here in honoring the memory and achievements of the pioneer of propulsion by the marine steam engine. Who shall say what manner of celebration our successors may expect to witness when the anniversary of the first combined application of gasoline and electricity to the marine engine and automobile comes around?

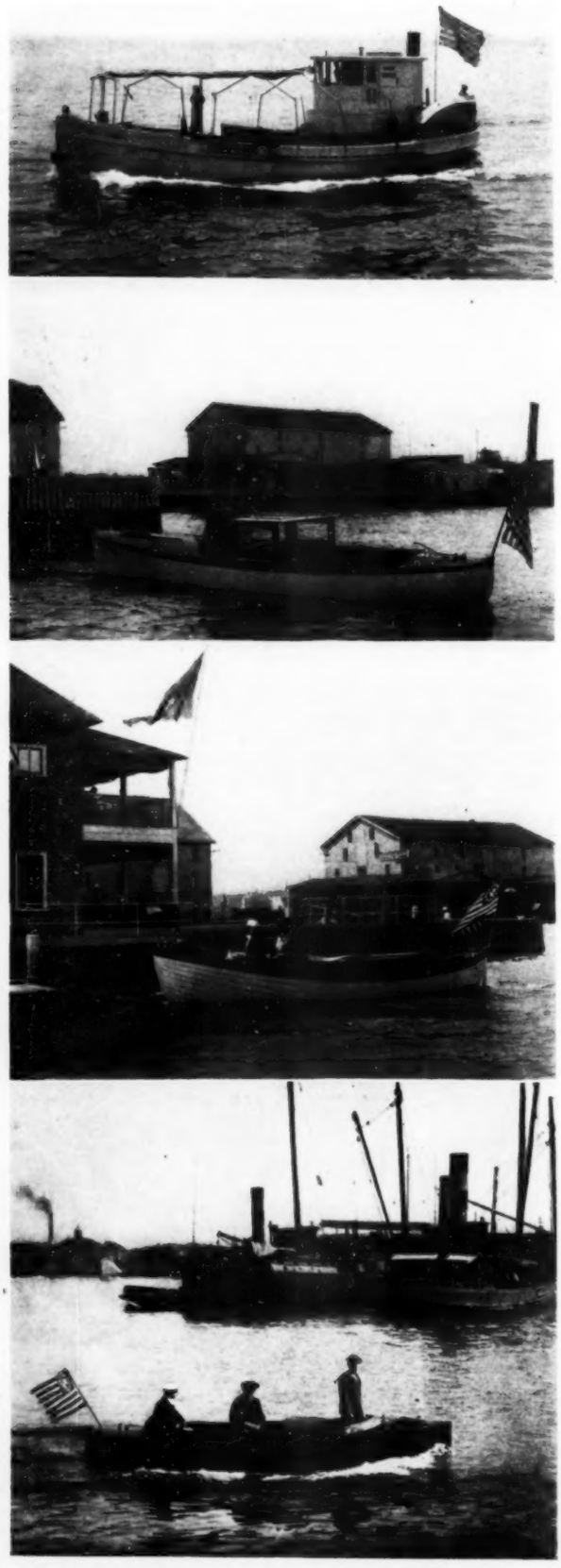
To be firmly convinced of the popularity and usefulness of the modern motor boat, one need only to have accompanied the New York Yacht Club's squadron on its annual cruise, which ended on Saturday night, August 14th, in that delightful haven of rest—Bar Harbor.

There was abundant evidence at Newport, at Vineyard Haven, at Portland and Rockland, Me., at Bar Harbor, and even at sea between these ports, at times, that the motor boat proper, and the sailing craft, equipped with power, was often on a par with the steam yacht of her size when it came to speed and weatherly qualities.

For example C. Howard Clark, Jr.'s, 114-foot auxiliary schooner Savarona, equipped with a 100 h. p. Standard motor, was able, in Tuesday's gale, to make Provincetown Harbor with ease, while those under sail alone had much more difficulty. When the same yacht's mainsail was split by collision with the Ariadne on Aug. 3, during the Seawanhaka-Corinthian Yacht Club's joint cruise, her sails were furled and she



"On the job"—Motor yacht towing out the racer Avenger.



Some small motor boats on the N. Y. Y. C. cruise.
Rody Green (at top) is the converted oyster sloop which acted as tender for the Elmina, winner of the Astor Cup. Next below is the interesting speed boat which ex-Commodore J. P. Morgan used as a tender for his yacht Corsair. Third from the top is Thor, which was carried on the auxiliary schooner Viking of James D. Smith, and below, the motor tender of Sultana, E. H. Harriman's steamer, which was chartered for the cruise by C. B. Alexander.

proceeded safely and speedily to the next port of call—New Haven.

Henry T. Sloane's famous old-time racing schooner Idler was also able to make Boston Harbor on the night of the gale with the assistance of her 100 h. p. Standard engine.

The 95-foot schooner Seneca, flagship of the Indian Harbor Yacht Club—of which organization her owner, George Mercer, Jr., is the Commodore—is another of the large motor auxiliaries that raced with the New York Yacht Club's cruising fleet, her owner being a member also of that club.

Speaking of auxiliaries it is a notable fact that this is the first year that the club in its squadron runs has provided prizes in a special class for motor auxiliaries as distinct from steam auxiliaries, which vessels had a separate classification. This voluntary action on the part of the premier American yacht club, through its Regatta Committee, is regarded as a commendable and sportsmanlike desire to encourage racing in the motor classes, and next year the owners of these boats—there are now 14 motor-driven schooners and two yawls in the club—hope to see at least two classes of motor auxiliaries competing in the races from port to port.

So much for the big boats under sail, now attention is called to the big and little boats that flew the pennant of the New York Yacht Club on the cruise and proved their loyalty to the flag, the club and the commodore. By accompanying the racing fleet from port to port, they demonstrated their ability to be useful as well as ornamental by acting as tenders and by towing the racing craft whenever necessary.

One of these was J. Adolph Mollenhauer's new 85-foot steel yacht from Henry J. Gielow's design—the Corinthia—with her two 80 horse-power 6-cylinder Speedway motors. The Corinthia joined the squadron at Newport and her spacious cabin and deck accommodations were fully enjoyed by Adolph M. Dick, Miss Julia Dick and Miss Althea Gibb, who were Capt. and Mrs. Mollenhauer's guests throughout the cruise.

Then there was the Cristina—Frederick C. Fletcher's 110-foot seagoing twin screw yacht from Boston, with her pair of 100 horse-power Standard engines. She made her way comfortably, carrying her owner and his guests safely from port to port and incidentally helping the Regatta Committee by towing a becalmed yacht to the starting line and performing other little services when occasion required.

Mulford Martin's 110-foot twin screw power yacht Asor II with her pair of 300 horse-power Craig engines, carried a large party out to see the Astor and King's Cup races off Newport, and then followed the fleet to Vineyard Haven. The Asor II is a particularly roomy boat, having sleeping accommodations equal to a 150-foot steam yacht. She carries a captain, engineer, two deck hands and a cook and steward.

In the old days when the big sloops like the Columbia, Reliance, Yankee and Virginia raced, they had tugs or steam yachts for tenders to carry spare gear and to tow them in and out of port; now, by reason of the development of the motor boat, owners of large sloops find it more desirable to build or buy a power boat for this purpose and keep her in commission all the season. A good example is the Ailsa Craig—winner of two races to Bermuda—bought this spring by Henry F. Lippitt, of Providence, and used by him to great advantage all summer as a tender and tow boat for his 65-foot sloop Winsome.

When much larger yachts sought shelter from the "norther" that separated the New York Yacht Club's cruising fleet, the Ailsa Craig came right through it, following her charge into Gloucester Harbor. The next day she took a line to both the Winsome and Istalena and towed them 50 miles at a 6 knot clip from Cape Ann to Portland Harbor. Few steam tugs could have done better, and besides there would have been a fat bill to pay.

The Sea Shell, a 40-foot launch, with a 25 h. p. Standard motor, is used as a tender by Cord Meyer for his sloop Altair, which yacht she followed from Oyster Bay to Newport on the Seawanhaka-Corinthian and Corinthian of Philadelphia joint cruise. The Sea Shell is also used as a tender for George C. and J. E. Meyer's "thirty"—the Atair.

George M. Pynchon, the owner and clever Corinthian skipper of the 65-foot sloop Istalena—winner this year of the King's Cup—uses as a tender for the yacht the Heralda, a powerful launch specially built for him by the Herreshoffs.

Speaking of yacht tenders, one of the most unique, homely, but useful, of these necessary adjuncts to the modern racing yacht, is the Rody Green, Frederick F. Brewster's tender for his schooner Elmina—a twice winner of the Astor Cup. The Rody Green, which hails from New Haven, was built years

The N. Y. Y. C. at Newport. In the foreground are some of the larger gasoline yachts.

ago as a plain everyday oyster sloop. When gasoline engines became popular for that type of vessel her owner put a good big one in the "Rody," dispensing at the same time with mast and sail. With a pilot house aft the former oyster sloop, still an oyster boat, attracted the attention of Capt. "Bill" Dennis, the skipper of the Elmina I, who suggested that Mr. Brewster charter the boat for a tender for the yacht to carry spare spars and sails and do the towing. This was done, and later, it is said, the Elmina's owner purchased her.

The Rody Green's equipment permits the housing and feeding of the Elmina's crew in an emergency. On King's Cup day last month the Elmina was towed from Newport Harbor to the starting line off Brenton Reef Lightship by the "Rody," which had on board all of the yacht's spare gear, spars, skylights and the like.

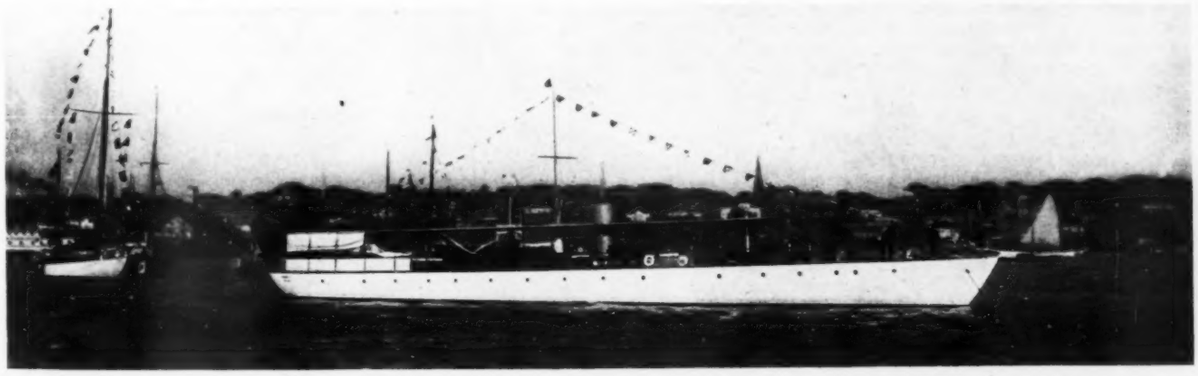
Most interesting, and an apt illustration of the value that yachtsmen have learned to place on the motor boat, is the great fleet of yacht tenders or launches of various types and sizes that are carried upon the davits of yachts, both steam and sail. An excellent opportunity was afforded the writer at Newport, during the New York Yacht Club's cruise—at the club's station No. 6—to observe these launches bringing and taking owners and guests from and to the yachts anchored in the harbor. On the Astor and King's Cup days when travel by yacht boats was at the maximum I'll venture to say that in a total of something like 200 trips made each day these little power boats transported not less than 2,000 persons—yacht owners and guests—representing many millions in wealth, and this without a single accident. True, there were some steam launches, but they were the exception, while the power boats were equally as speedy, and in some cases faster than those propelled by steam.

A notable example of the modern yacht tender is the new 36-foot speed launch which brought ex-Commodore J. Pierpont Morgan ashore from his palatial steam yacht the Corsair. This boat, which is painted white, and is equipped with a 25 horse-power Panhard engine, attracted much attention on account of its plate glass half cabin with a solid flat roof. It encloses the front and sides of the forward part of the midship cockpit, affording an ample shelter from the rain or spray without obstructing the view of the passengers.

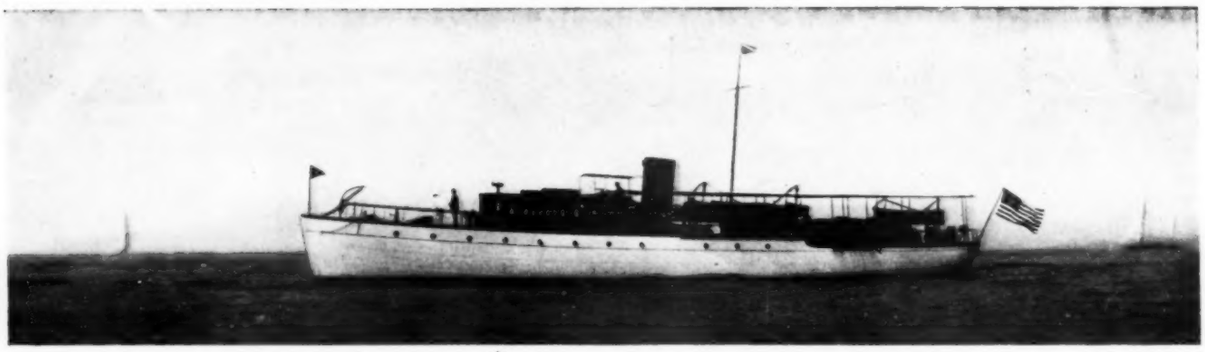
The engine is located under a turtle back deck in the bow, and is controlled by the helmsman, who steers with an automobile wheel attached to the bulkhead enclosing the engine. The hull was built by the Simplex people. This boat and two other launches that the Corsair carries are hoisted on her davits.

E. H. Harriman's barkentine-rigged steam yacht Sultana chartered during the cruise to C. B. Alexander, has a useful power tender that carries ten persons comfortably, while Commodore James hoists on the flagship Aloha's davits a pair of kerosene-burning launches which are speedy and roomy.

Corinthia the new 85-foot steel yacht of J. Adolph Mollenhauer. She has two 80 h. p. engines.



Asor II—110-foot twin screw gasoline yacht of Mulford Martin.



Cristina, the 110-foot, 100 h. p. twin screw motor yacht of Frederick C. Fletcher.

James D. Smith, former commodore of the N. Y. Yacht Club, has named the largest power launch of two that he carries on his auxiliary schooner Viking—the "Thor." This is a lap streak whale boat about 30 feet long, equipped with a gasoline engine that drives her at good speed.

George J. Gould has procured as a tender for his steam yacht Atalanta a 35-foot motor boat, which is new this season, and is equipped with two six-cylinder Speedway engines which give her a speed of 18 miles an hour—one of the swiftest in the fleet.

A Race That Was Not Finished.

By One Who Saw.

THERE is probably no more exciting contest to witness than a close race between high-powered motor boats. When such a race ends, however, in as exciting a manner as did one of those held during the middle of July at Alexandria Bay at the Thousand Islands, the spectator will be filled with a sufficient number of first-class thrills to last him throughout a whole season.

There were five contestants entered in this race, which was open only to boats under forty feet in length having records of better than 25 miles an hour. The course was to have been three times around Whiskey Island, T. I., with the start and finish at the gas buoy located in mid-channel. The distance from the buoy around Whiskey Island and return is nine miles and the racers were to travel down stream to the east of Sunken Rock Lighthouse and pass up on the opposite side of the channel, thus making all turns to port.

The start was perfect. Stranger, belonging to Commodore Bourne of the New York Yacht Club; a new boat recently built for W. B. Hayden, of Columbus, Ohio, and the Buffalo, owned by the Buffalo Gasoline Motor Company, started from a position of rest directly at the line; while Duquesne and Pirate, belonging to A. E. Peacock, of Pittsburg, preferred to try their chances with a flying start and crossed the line at full speed but one or two seconds after the boom of the gun. It was the most even start it is possible to imagine, and a straight line drawn at right angles to the direction of the course would have passed through every one of the five boats.

Down the narrow lane between the rows of pleasure craft raced these five boats—side by side and as far as the strongest glasses could reach, the long, lean craft maintained this position. Thundering down upon the last turn of the first round they came—four abreast. Cutting through the waves and throwing the spray and foam far out on either side, they looked at first like white-winged birds skimming lightly over the water. But as they approached and the angry, defiant roar of the unmuffled exhausts could be heard far above the swish and swirl of the cleft waters, they seemed to be savage sea serpents churning the waves with their tails and emitting fire and smoke and fearful sounds from their mouths and nostrils.

Just before the turn was reached, it was observed that Duquesne and Stranger were slightly ahead of the others, and as they emerged from the company of their fellows, it seemed as though inches only separated the gunwales of the two leaders.

On to the turn they came, Duquesne at the "pole." No time here to slow down motors for the sharp swerve around the buoy; a foot gained now meant, perhaps, the winning of the race. Duquesne turned; so did Stranger. The momentum of Duquesne listed her heavily to starboard; so did the momentum of Stranger against her port-turned rudder. Duquesne's crew of two threw their combined weight on the port gunwale; so did Stranger's. Duquesne righted; but Stranger did not. Farther and farther she leaned until her decks were absolutely vertical, and spectators in other boats could see the entire flooring in the bottom of her cockpit. She had been caught in Duquesne's wash.

The sight was thrilling; she seemed to be possessed of a fiend as she lurched and lunged in the toils of the swirling water that kept her close-coupled with her rival. At last, with what appeared to be a supreme effort, she endeavored to right herself and, failing in this, with a final lurch greater and more violent than any she had heretofore made, she hurled far from her the two occupants of her cockpit, leaving them struggling in the water supported by the life preservers which they wore. Then, as if satisfied with her work, she righted herself and, with no hand on the tiller nor finger at the throttle, she continued on her way at 29 miles an hour—straight for the fleet of large and small motor boats which were anchored along the course.

Visions of a wild motor boat racing madly down the stream and dashing into groups of smaller craft, helpless because of their anchors, flitted through the minds of the spectators and filled them with horror. But as unexpected as her previous actions had been just so unexpected was the manner in which she was brought to a stop before there was any chance for damage to be done.

When her crew were thrown from her cockpit, the rudder was left turned to port, and it remained in this position after she righted herself. Still scraping gunwales with Duquesne after the men had been thrown overboard, the lightened weight enabled her gradually to pass her rival. Free from the restraining influence of Duquesne, however, Stranger started to cross the former's bows obliquely. Duquesne, maintaining the same course as formerly, struck Stranger a glancing blow amidships which proved to be just sufficient to cause the latter to roll beyond her point of stability and turn over. The momentum of her roll and the location of her air compartments, however, caused her to make a complete turn through the 360 degrees until she had again righted herself, but by this time the carbureters had been filled with water and the motor, in consequence, had stopped. The empty boat drifted slowly on an even keel.

The men who had been in her were rescued by one of the racers which came up but a few seconds after the accident happened, and aside from a few scratches to Stranger where Duquesne's bow had hit her, no apparent damage was done to either crew or boat. Had Stranger's rudder not remained turned in the right direction, she would have continued on her way, leaving destruction in her wake, until she rammed herself to pieces against some island or collided with some craft larger than herself.

Hints on Motor Boat Navigation.

Part IV—How to Handle the Boat in a Storm

By George S. Goldie.

IN the midst of the oil slick the boat lay easily. The wind was gradually working to the north, but all went well until word was passed up from below that there was but a small quantity of oil left. This must be kept for use in the motor when the blow was over, yet something must be done to still the seas if it lay within our power. The skipper now ordered the loose end of the riding line made fast to the stern bitts and began to watch the seas for a favorable opportunity to cast off the line from the forward bitt and allow the boat to swing stern-to.

There is an irregular regularity to the run of the waves as regards their height, and they travel in series, generally of three or four, each series being larger than the preceding one until they culminate in a wave distinctly larger than the rest, after which comes a comparative lull in their violence. The skipper waited for the passage of such a wave, then ordered the line cast off from the bow. Rapidly the boat payed off and when lined out with the drag the oil bag was brought aboard and the motor started ahead slowly. Now, while waves travel with a speed according to their height, the velocity increasing rapidly as they grow larger, the water does not move excepting for a surface current of varying strength up to three miles an hour. As we lay it was soon seen that the slow motion of our wheel had created a current that was reaching some distance astern and the effect of which was to break up the cresting of the oncoming waves while the pull of the drag prevented our broaching. On the other hand our drift was increased in a decided degree and the shifting of the wind was fast sending us back to the shoals, the Cape having been in sight for some time. As we drifted down it was seen that fortune was sending us among them through deep water for the present, though ahead and in our path lay the breakers on the McBlair Shoal. To port was Orion Shoal with its breakers, its bell and its twinkler; and to starboard the water was breaking furiously on Great Round Shoal.

In a heavy sea you may be fairly sure that where water is not breaking it is deep. When along the Cape Shore of Nova Scotia with its reefs cropping up for miles out in the sea I learned from the Gloucestermen that they feel safe in heavy weather because the breakers betray the reefs; in fair weather they navigate more carefully. So with us, the shoals were all sending out their loudest warnings, and throwing high in the air their brilliant white beacons.

A desperate chance was to be taken here. The boat was insufficiently supplied with either gasoline or oil to battle much longer with the elements. A man, hatchet in hand, was stationed at the riding line while the skipper watched intently the run of the breakers on Great Round Shoal.

Judging his distance from the leeward end of the breaking line of water the skipper pulled the jingle bell for full speed ahead; ordered the drag cut free and we were off on a mad tearing race with the great billows. Gradually the skipper worked the boat toward the breakers, and arriving at the end of their line brought her to in their lee and anchored.

While writing this article word has come of the severe drubbing received by the New York Yacht Club fleet in a similar blow, a westerly wind changing to a norther, blowing from 35 to 40 miles an hour, and the fleet being scattered into all the ports along the coast from Provincetown to Portland, some of them being rescued off the Cape and towed in by steamers.

When anchoring under these conditions and doubtful of your holding, the strength of the ground tackle may be augmented by making fast the small anchor to the ring of the large one before dropping, and allowing the small anchor about two fathoms of warp. Or if dragging and not having any extra cable, the small anchor can be sent down by casting a running noose of its warp around the large cable.

If dragging anchor over a weedy bottom the only remedy is to lift it. It will probably be found to be as large and as round as a barrel with weeds.

Behind a shoal is a queer place to find a harbor, you think. The next time you are in a blow, try it, and you will find the lee side of a reef or shoal on which the water is breaking to be quite a snug place. And if in no hurry and shooting before a following sea try the drag astern. Make it of a couple of strong buckets, a canvas cone, or anything that will offer a good resistance to the water, and you will find the boat traveling without either the danger of broaching or of being tripped by burying her bow while shooting on the face of a steep sea.

The blow having spent its force, we started the motor. It grunted laboriously a few times, then stopped, and its peculiar straining effort indicated a binding at the wheel. Feeling with the end of a boat hook confirmed the suspicion that a piece of line had become wound around the shaft. Heretofore this has been a serious matter; it being no unusual thing for a man to strip and be lowered into the water with a line around him to clear the wheel—a slow and laborious piece of work. Our skipper made fast to a long pole a blade similar to a sickle in shape but smaller in length. With this a man reached over the side and quickly cleared the shaft.

Nantucket being the nearest port for gasoline, we started for that port, and night having come on we steered west by north until Nantucket Great Point light bore south, then altered our course for the harbor. On the way we saw the lights of another launch which appeared from her motion to be without power. Running close-to, we found that to be the case and that she had pounded over a shoal during the blow and was leaking beyond their control, the water being above the flooring. They said the leak was on the starboard side a few planks above the garboard, that they were partly stove and they did not know what to do but pump.

Ranging as close alongside as we dared, for there was still some sea running, our skipper told them to cut a piece of canvas about four feet square, to take two sticks, or smash an oar in halves and fasten the two opposite edges of the canvas to the pieces. Then to fasten a shorter piece of wood to one of the other edges and to the center of each stick to fasten long lines. They were then told to take the canvas forward and, while keeping the canvas inboard, to drop one of the line attached to one of the sticks over the bow, the man tending it to go to the port side and let the loop of the line sink under the keel and while paying out a good length for both himself and the man tending the canvas to walk aft until over the leak. At this point the man on the port side was ordered to haul in and the man with the canvas to lower it with the edge, having the small stick toward the bow. It was then lowered until it covered the break. The two lines then were hauled taut and made fast. The line fast to the small stick was led forward to the bow and made fast to prevent the canvas washing away when being towed. The canvas was quickly sucked against the leak and the men soon reported a slight gain on the water.

Manouvering near enough to cast a small line with a weighted end to them our cable was hauled aboard and made fast to their forward bitts. Towing slowly to avoid dislodging the canvas, we made the harbor.

Many times a boat may be stove at or near the water line. A coat or any garment jammed into the hole from the outside is the quickest remedy.

At the start of many fires the sacrifice of a few garments would save the boat. They are generally at hand and of substance enough to smother any fire they can cover. Woolen garments do not take fire easily and are the best.

I once was obliged to insist on having the life preservers in the cockpit instead of in the cabin. It is poor judgment and worse seamanship to have them where they cannot be gotten at in a moment's time.

Let us suppose that a boat has arrived at the last extremity and is obliged to go ashore. I looked the problem square in the face at one time when three-quarters of a mile off shore abreast Highland Light Cape Cod. Three of us had been fighting a southeast blow all day in a launch 26 feet 6 inches long by 6 feet beam. It was a twin-screw, but one motor was dead and the other cut down from 450 to 250 revolutions and slowing steadily. The wind was then blowing at the rate of 40 miles and backing to the northeast, trapping us as completely as was possible. As the blow lasted over 40 hours longer, it would have been a case of going ashore but for the assistance of my good friends, the Gloucestermen.

There comes, if the blow be heavy enough, a time when a boat can no longer ride to her anchor. The smaller the boat the quicker that arrives. This is when she no longer lifts quickly enough to ride the crests and fetches up on her cable during the backward surge, forcing the bow under. It is time to cut the cable, for if the sweep of the waves increases ever so little beyond that point the boat will ride under never to reappear. A large vessel, when driven to cutting, or, having parted her cable, should, if manageable, drive ashore bow-on in the most favorable spot she can reach. A launch is in a far worse position, as it will, in a strong surf, go end over end before the beach is reached, unless the combers are partially subdued. Oil comes into play, also the drag. When it comes time to slip the cable, let go the drag and begin with the oil; the oil will go to the beach faster than the boat and the further out its use is started the wider it will spread. Use it freely, the heavier the slick the better it controls the waves, which it will do to a certain extent, though it may not prevent them breaking on a beach.

In moderately strong breakers the drag will keep the boat from broaching, though if the seas are large the boat will probably be thrown. In that event the surest method of reaching the shore is to lay back against the face of the oncoming wave with your arms outspread and let it drive you as far inshore as possible. Do not waste strength in swimming but repeat this with each wave. It is supposed, of course, that a life preserver has been strapped on, for no boat should be without them.

The location of the bow and side lights is important in rough weather. To have the bow light on the deck level is not high enough, as it will dive under in only moderately heavy weather. Make a special staff and elevate it. Keep the side lights back from the edge of the boat and elevate them one and a half to

two feet above the deck. Swing the stern light from a staff instead of putting it on the after deck, as so many do, contrary to the law, which says it must be higher than the bow light and to be seen clear around the horizon.

It is at times needful to know how far from land one is, particularly when there is an outlying danger. If running outside, it is important to keep clear of shoal spots when there is a swell on, and that is most of the time, because even though there may be several feet more water than the boat draws at any moment there may rear on the shoal spot a blind breaker that would be dangerous to meet.

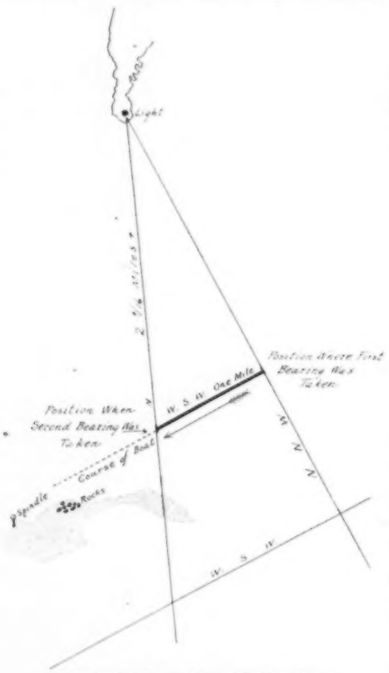
Before arriving near the spot take a sight over the compass at any prominent object that is also on the chart. We will say it bore North North West. Note carefully the compass direction you are heading and hold true to the course for the length of time it takes the boat to run one mile, then sight over the compass on the same object; the latter sight was North, and the course of your boat West South-West.

Now draw on the chart or on a piece of transparent paper laid over it a North North-West line, a North line, and a West South-West line, the latter to be placed anywhere you wish so long as it crosses the other two lines. Take a card or anything with a straight edge and mark off on it from the scale on the chart one mile. Lay the card on the drawing with its edge parallel to the West South-West line and slide it till the mile on it reaches from one line to the other. Where it touches the North line is your position, and by measuring from there to the intersection of the North and the North North-West line gives your distance out. This method of locating one's position may be used with as much surety on a light at night, and perhaps more accurately.

This brings us to the question of safety in running at night. To my mind it is surer than by day, from the fact that a light at night can generally be seen twice as far as a light house or light vessel in the day time. If one bears in mind that at night high land appears to be closer than it is; and low land is *nearer* than it seems, the running will be made much simpler.

When running far from the land it is often difficult to keep the run of one's position because what land is to be seen appears like an indistinct haze on the horizon and presents no form of any sort. Mingled with this will be appearances where the water seems to meet the sky line; these are your guides. They represent the indentation where the water encroaches upon the land, and according as they are wide or narrow, by comparing with the chart you can tell which parts of the horizon they represent.

Logs are not always accurate, and as they are very useful in fog running it is well they should be. Drop it over and run betwen two marks whose distance apart is given in the



How to find position by bearings.

Buoy Book, preferably marks that are many miles from each other with no strong currents between. If the log registers too much take the slightest portion of the twist out of the blades, using a pair of pliers. If it does not register enough put in a trifle more twist. In running against a sea the log will register more than the distance run on account of the retarding push of the wave. When used in a following sea it will not register as much as the distance run; the send of the sea assisting it to travel without revolving.

Small boats which do not go off shore are able to thread in and out of reefs and shoals in a manner unknown to larger craft, and for these a knowledge of range running is important. Ranges can be had for all channels which have land anywhere near. When running an unfamiliar channel look ahead and fix in your mind two marks that are in line with each other, jot them down in a small book (in which many memoranda should be kept relating to your boat) and you can always run that channel safely. For example, around the eastern end of Long Island Sound we have for a run through Bartlett's reef, a large rock on the southern edge of Two Tree island in line with or "on with" a large red barn on Black Point. For a run between Seal Rocks (submerged) and Fishers Island, the northern edge of Micopesset Island "on with" Wicoplaset Rock spindle. To clear a submerged rock at the harbor entrance, the second window of the light-keeper's dwelling "open" (showing) with next building to south. Ranges are more exact than the compass.

Small boats are apt to skirt reefs and shoals. The location of these can be seen by the difference of the ripples or waves over them and those of the surrounding water. These ripples, also the waves of a tide rip, are useful as guides in fog.

If the boat is brought to a standstill, by running through seaweed, reverse the wheel a few revolutions and go ahead again. The seacock strainer should be scraped on the outside by means of a long stick held over the side.

Any motor boat will not be so lively in a seaway if it can show some sail. A very convenient mast is one split near the bottom with a long bevel, being held together by a hinge at the lower edge, and when set upright having several iron rings which have been cut through and the ends turned outward at a right angle, the ends are drilled through and bolts placed in them. These rings are a little smaller than the mast and when lying at the foot of it spread a little larger. In use they are slipped up to place and the bolts set up with a wrench. When not in use the mast extends back over the cockpit at any height desired and makes a fine ridgepole for an awning.

In a breeze coming from aft the beam with the sea anyway sharp, awnings or spray hoods of any kind should be taken in, as the boat may be overturned as she rolls down when the crest lifts the quarter.

A strong breeze coming may be told by a darkening of the water to windward, by dust raised on the shore, by blue-black clouds to windward or in any other part of the sky; and in many other ways.

When running before seas that are too strong for the boat the coming of a sheer may be told by an absence of feeling in the tiller or wheel. When the sheer commences be quick but not jerky in giving the helm sufficient movement to counteract it.

In strong head seas, if your boat is pounding or threshing badly, swing it off a little, even though it be not straight for home. By tacking you will save leaks and run easier.

Carbureter Nozzle Action and Power Development.

By William Wallace.

ADMITTEDLY, the ideal mixture for use in motor boat engines is one in which a proper amount of fuel vapor is homogeneously mixed with a proper amount of air. It is worthy of note in this connection that the mixture cannot be homogeneous in the proper sense of the term unless the fuel is present in the form of vapor. This state in the mixture is, of course, very difficult of attainment, but its desirability is beyond dispute.

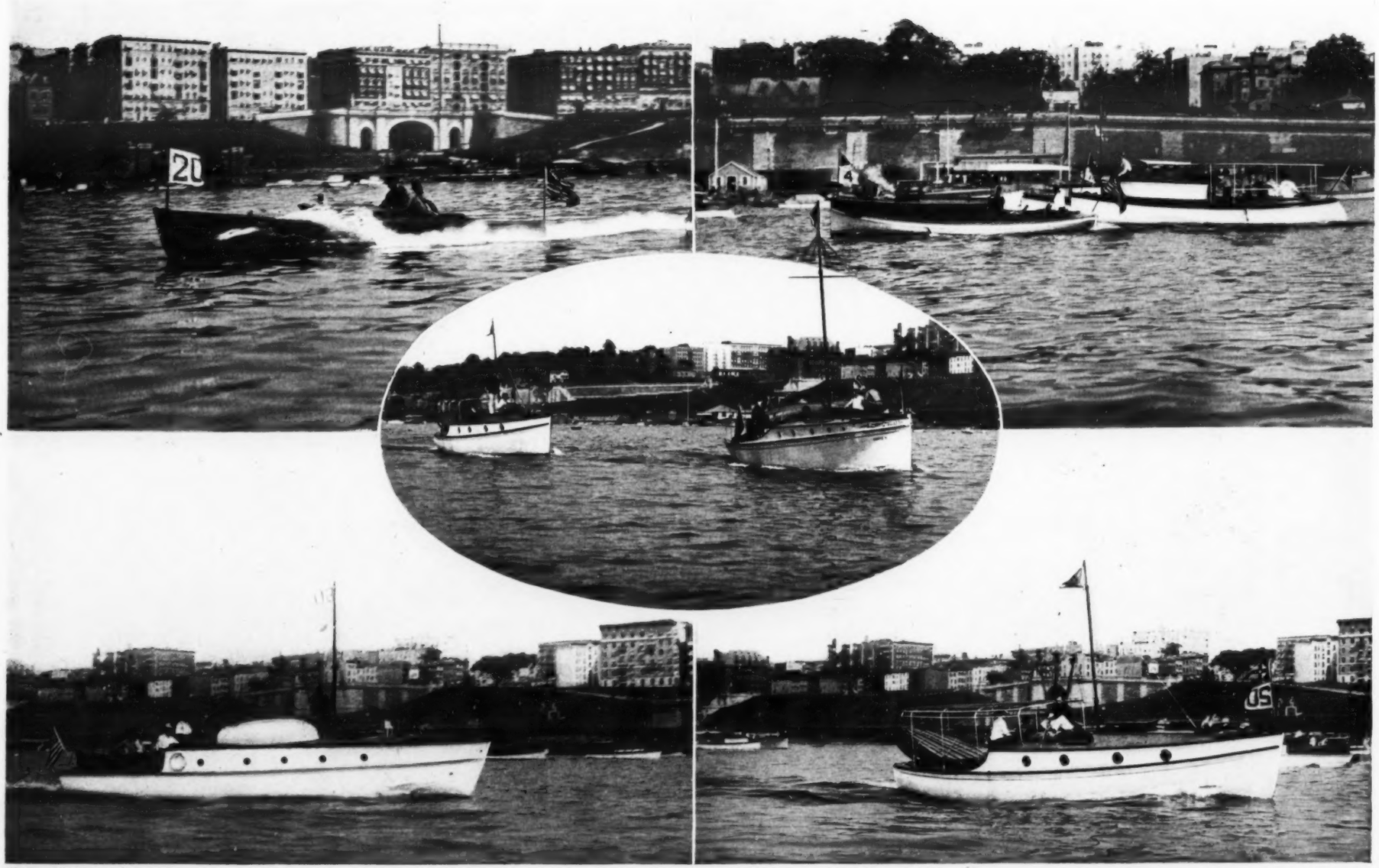
By far the greater portion of the weakness of the common "spraying" type carbureter is attributable to the ineffective way in which the nozzle presents the fuel to the air. The nozzle or orifice through which the fuel has its exit is usually spoken of as the "spraying" nozzle, but, in so far as the formation of any spray is concerned, this term, as applied to many of the individual nozzles in present use, is a misnomer. The use of this descriptive term is applied to these nozzles with about as much reason as some of the attempts at accomplishing aerial travel can be called "flying machines." That is, it conveys an idea as to what is desired, rather than what is actually accomplished.

A simple illustration of the effects of an approach to homogeneity of mixture can be drawn from effects which have been noticed by all: Thus, if a pint of gasoline contained in a cylindrical can without cover be ignited, it will require a given time for its complete combustion. If, however, the same quantity of the fuel is poured into a shallow pan, such, for instance, as those commonly placed under cars while standing on the garage floor, a very much lesser time will be required for complete combustion.

The reason for the reduction in time for combustion in the latter case lies in the fact that a vastly greater surface of the fuel is in contact with the combustion supporting element, the oxygen of the air. To carry the illustration still further, if the pint of fuel were vaporized before its ignition the combustion would have been still more rapid, and the papers next morning would have told of the gasoline explosion in so-and-so's garage. In each of the three cases the same amount of fuel was burned and the same amount of heat liberated, but the work accomplished in expansion of the gases of combustion is widely different, and inversely proportional to the time required for the combustion.

The analogy with the above in a carbureter's action, referred to the performance of the fuel nozzle, is obvious, since if fuel is discharged in a stream, it will simply become spread over the surfaces and present but a relatively small surface to the air, with consequent slow combustion; but if it is discharged as a spray, in the proper sense of the term, it will present an enormously greater surface, and will more nearly cause the approximation of an ideally homogeneous mixture of vapor and air, with consequently accelerated combustion.

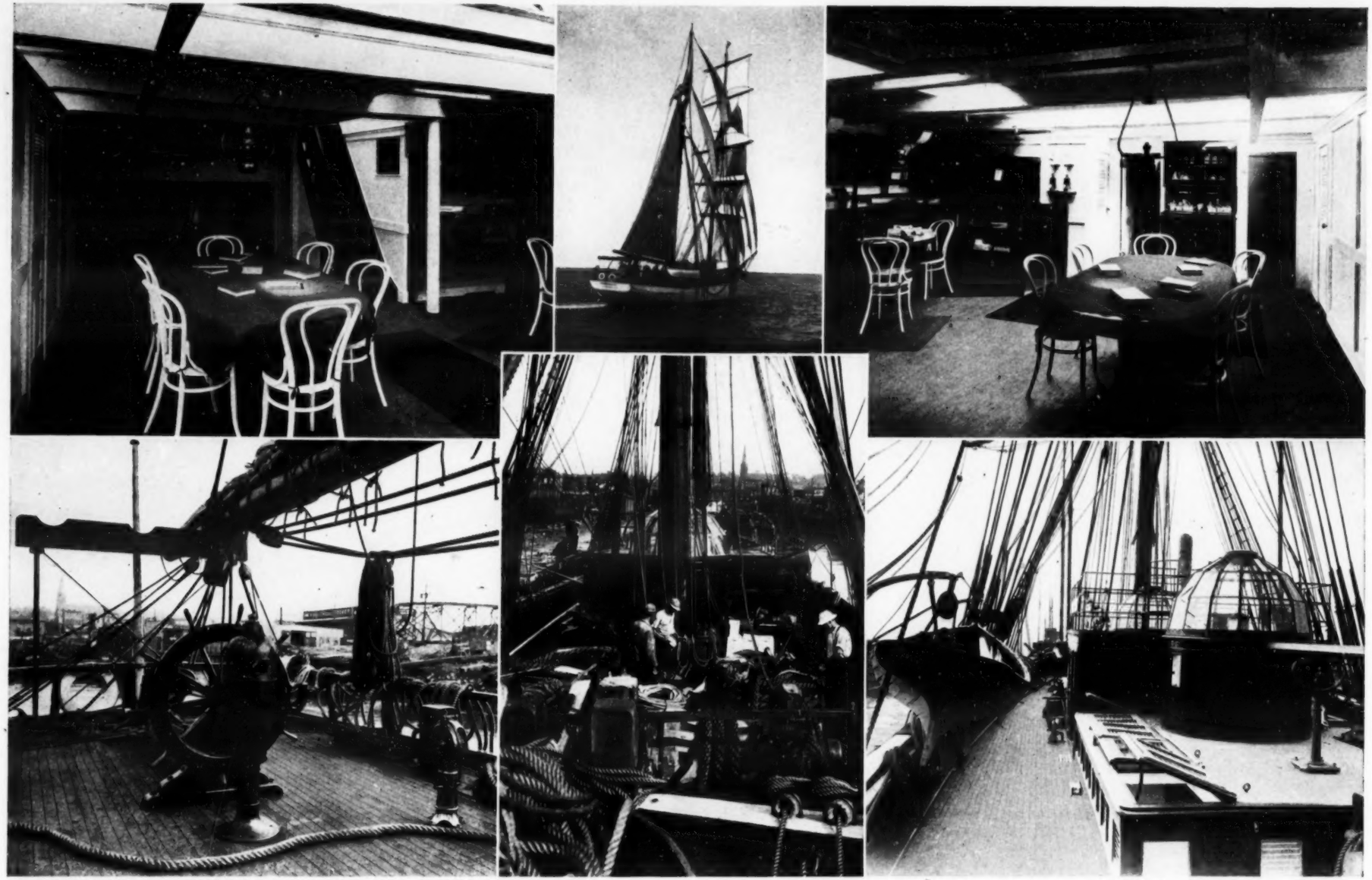
Another point for consideration is the fact that if the fuel presents but a relatively small surface to the air, the combustion will not be so complete. It is thus seen that the finer the fuel division at the nozzle, the greater the gains on two scores—power development and fuel economy.



Photographs by Levick

The race around Long Island and the Colonial Yacht Club Regatta.

The boats which competed in the race around Long Island—a summary of the results of which appears on page 47 of this issue—are shown in the lower and center views. At the left is the Virginia, at the right Elmo II, and in the center the winner, Irene II, leading Elmo II shortly after the start. The fourth boat in the race was Snapshot. At the left above is shown Kitty Sparks, winner of the 30-mile race for speed boats, and at the right the start of the 16-mile race for cabin cruisers in the regatta on the Hudson.



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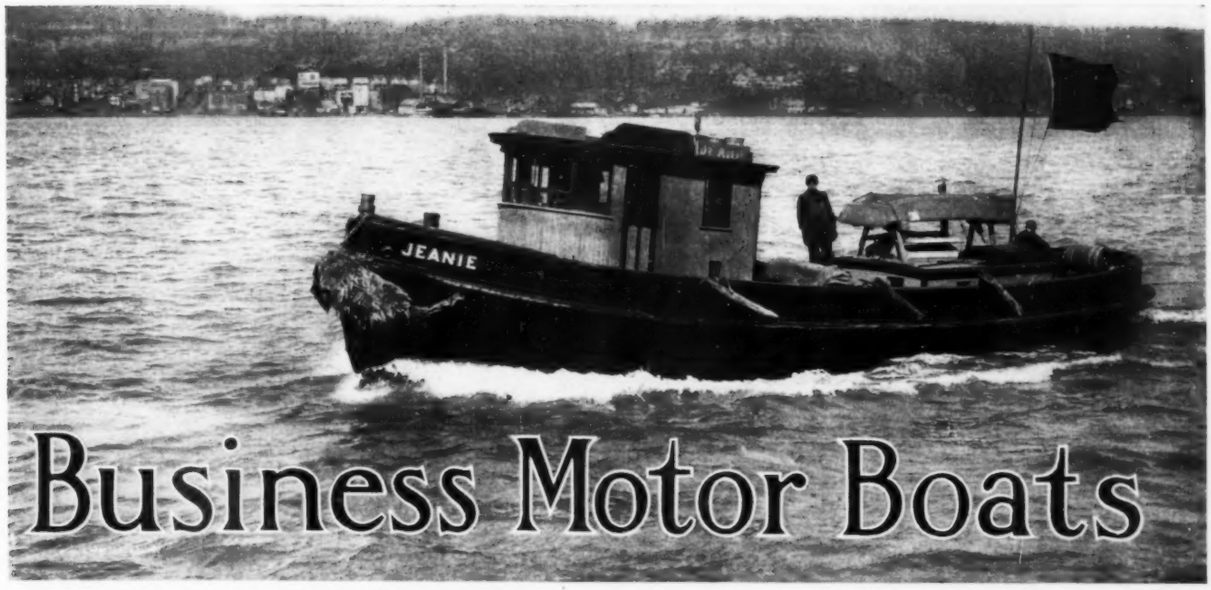
The sailing of the non-magnetic ship Carnegie.

On Saturday, August 21st, the magnetic survey ship Carnegie, of the Carnegie Institute, started on her wanderings which will carry her into every portion of the world. The views above show the interior of the main saloon and the Carnegie under sail. Below are deck views looking aft and forward and at the right will be noticed the circular observatories. It will be remembered that the Carnegie's special Craig non-magnetic engine was described in MOTOR BOATING for June.



Business Motor Boats

Jeanie, a gasoline delivery boat with 50 h. p. Standard motor which plies the waters of New York Harbor on the business of the E. I. Dupont de Nemours Powder Co.

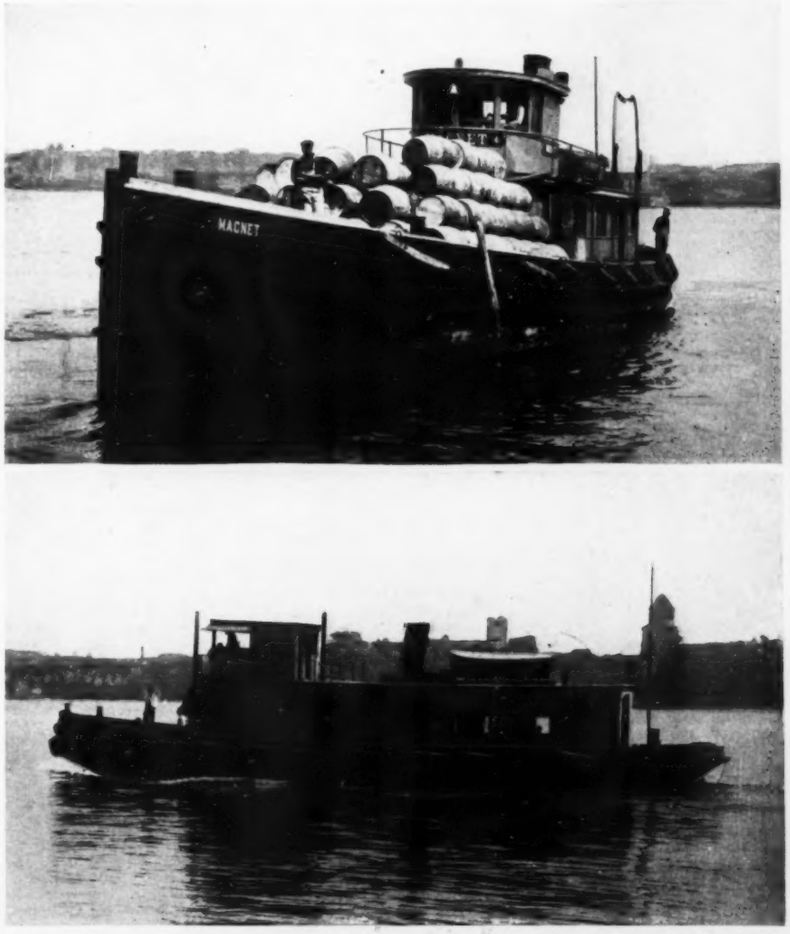
The Working Boats in the Waters About New York and What They Do. A Great Variety of Trade Represented by an Extensive Fleet.

NEW YORK'S commerce by steam and sail is so immense and so completely fills the harbor and lines its many miles of water front that its considerable fleet of motor working craft is all but overlooked and unknown. Pleasure launches are plentiful, especially upon a Sunday or holiday, when they fill the place left vacant for the day by the temporary withdrawal of the regular commerce, yet the casual observer may take many ferry boat trips or make frequent visits to the piers without noticing a single commercial motor boat, and doubtless would be impelled to the hasty conclusion that New York harbor has no motor working boat fleet. Such a conclusion, however, would be far from correct, for the commercial working boats of the metropolis would form a quite large and very interesting fleet could they be gathered together instead of being scattered and lost as they are among the vast number of steam and sailing craft. Almost every size and type of boat is represented from the converted sail boat or home built launch which daily carries a party of fishermen to the fishing banks, to the big tugs and lighters of the large oil companies or the auxiliary schooners of the Fulton market fishing fleet.

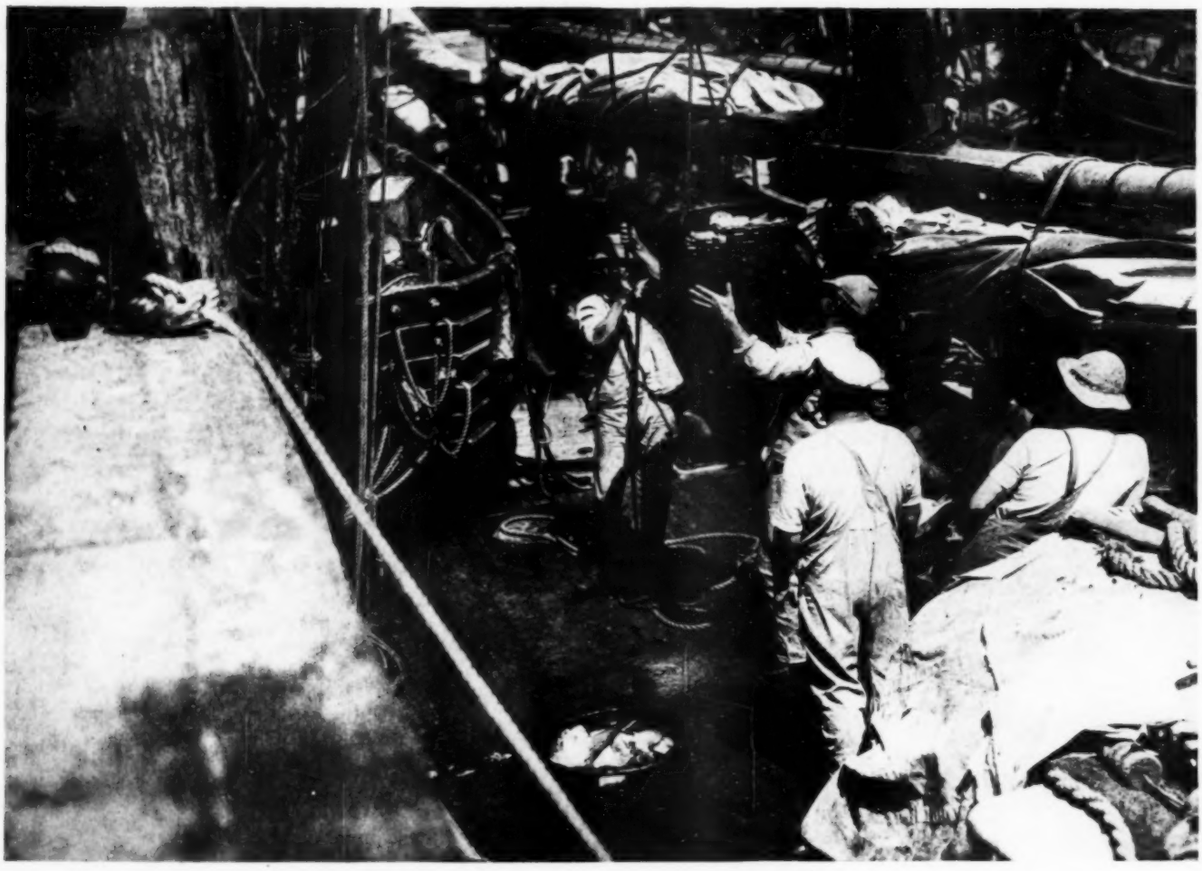
The first working motor boat in New York harbor appears to have been the Tip Top, which was built for the Valvoline Oil Company by the New York Yacht, Launch and Engine Co., at Morris Heights, New York City, in 1898, and is still in daily use. This boat is 60 feet long, 14 feet beam, 6 feet draft and is equipped with a 75 h. p. Standard motor. The Tip Top is employed to carry naphtha from the works of the company at Edgewater, N. J., to its stations at New Town Creek, Gowanus, Coney Island, Barren Island, City Island, Morris Heights, Hastings, Bogota, Port Jefferson and other points in the vicinity of the city. It has two tanks with a capacity of 2,390 gallons.

The next boat of the Valvoline fleet is the Magic Safety, built by Jacobsen and Petersen, at South Brooklyn, in 1901. This is 81 feet long, 17 feet 4 inches beam and 6 feet 10 inches draft. The motor is an 85 h. p. Globe. This boat carried kerosene only and has four tanks with a total capacity of 6,322 gallons. The third boat of the fleet is the Magnet, a lighter 90 feet long, 18 feet 9 inches wide and 7 feet draft. The tonnage is 69 gross and 47 net. This boat was built in 1903 by Jacobsen and Petersen and is equipped with a 100 h. p. Globe motor. It delivers kerosene to stations as far distant as Bridgeport, Conn., carrying 5,250 gallons in tanks and 150 barrels on deck.

The Standard Oil Company has an oil supply boat, the Petrolia No. 3, built by L. J.



Magnet (above) and Magic Safety, two of the fleet of the Valvoline Oil Co. The former has a 100 h. p. Standard and the latter, an 85 h. p. Globe motor.



Down with the fishermen in Fulton Market. Unloading a haul.

Nilson, at Baltimore, and equipped with a 75 h. p. Standard motor. This boat supplies the stations of the company along Long Island Sound as far east as Wilson's Point, Conn. There is also a small launch used by the superintendent of the company's works at Constable Hook, N. J.

The largest field of motor boat usefulness, apart from pleasure, is for fishing, but this fleet must be divided into two classes, the market fishermen and those who fish only for recreation. The former again may be classed according to whether they seek their supply upon the open ocean or merely gather it from the local fishermen along the shores of the harbor or the adjacent waters. In the latter class may be included the boats which carry lobsters, clams and oysters in their seasons.

A good example of the typical market fishermen is the Irene May, a two masted schooner, owned by Captain Jan Erickson and carrying fish for the Fulton market firm of Kingsland and Comstock. This boat has a 50 h. p. Standard motor and its tanks will carry 800 gallons of gasoline. Its trips for fish occupy a week and are frequently extended as far south as the shore of Virginia or North Carolina in the spring or well off the New England coast in the summer. The return to the market is usually upon a Wednesday evening, and within 24 hours or less the boat has left port upon another trip.

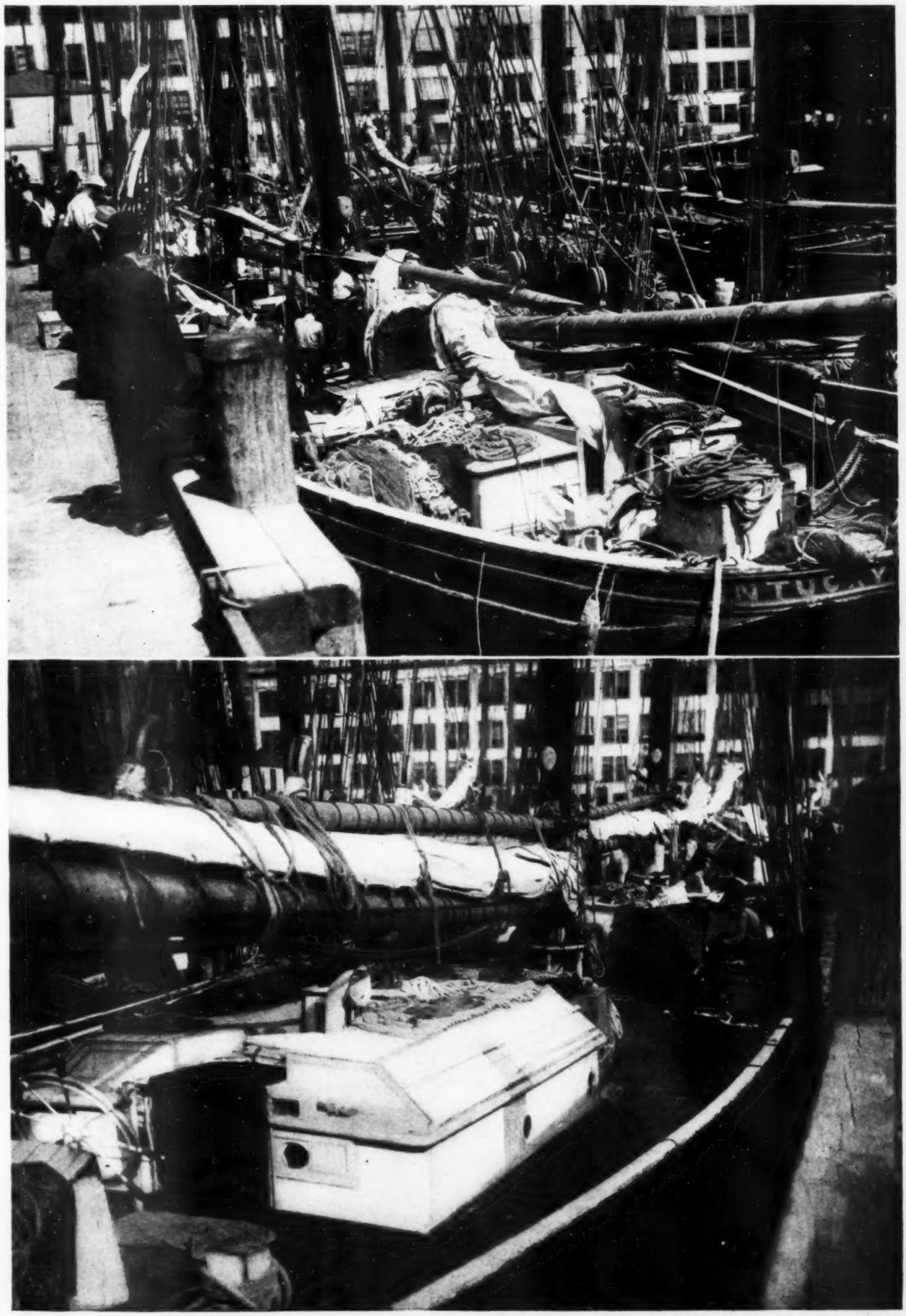
The Moccasin is a motor schooner, owned by C. J. Fiordland, of Port Monmouth, N. J., and comes into the market three or four times a month. It is 45 feet long, 13 feet 6 inches beam, 5 feet 6 inches draft and carries 6 tons. This boat makes trips as far south as Maryland and as far east as Block Island. The motor is an 18 h.p. Buffalo.

Lottie B. with her motor going. She carries fish from Freeport.

A representative buyer's boat is the Harrie and Joe II, owned by Timothy O'Brien, which makes regular trips along the shore from Sandy Hook to Stamford, Conn., buying from the local fishermen. This boat is 50 feet long, 9 feet beam and is equipped with an 18 h. p. Standard motor. It has a capacity of 12 tons. The same owner also has a second boat named the Ben Hur, 40 feet long, 7 feet wide and equipped with a 16 h. p. Lackawanna motor. This boat will carry 8 tons and is regularly employed between Gravesend Beach and Great Kills, but frequently makes trips during the season along the Connecticut shore to Noank, Mystic or even to Block Island.

The President II is owned by George Brady, of Brooklyn, and is employed in bringing oysters and mussels from Oyster Bay. It is 40 feet long, and has a 16 h. p. Globe motor. The Lottie B is 36 feet in length with a 20 h. p. Globe motor and carries fish from Freeport. The Mary S. Davis is a lobster boat, having a well in which the lobsters may be kept alive until they reach the market, and there are several others of this type.

The pleasure fishing fleet, as it may be called to distinguish it from the boats of the market fishermen, is a large and motley collection of boats which daily gathers at the fishing banks off the south shore of Long Island. Some of these boats run from the upper part of the city but most of them put out from Gravesend Beach, Carnarsie, Sheepshead Bay and the various fishing stations on Jamaica Bay. They are of all types and sizes, but the largest and most important is the Arion, owned by Michael Blasius, of New York City. This boat is 101 feet long, 17 feet beam and was built by the Electric Launch Co., at Bayonne, N. J., three years



At Fulton Market. Down below, in such boats as these the motors do their duty faithfully. In the lower photograph the end of the gasoline tank which is placed on deck of the Irene May, may be seen projecting beyond and just forward of the cabin trunk.

Moccasin, a motor schooner which goes off on long trips.

The President II brings oysters and mussels from Oyster Bay.

ago. The motor is a 500 h. p. 6-cylinder Standard which gives the boat a speed of 18 miles per hour with 100 passengers aboard. At the time this boat was built, it was the highest powered single gas engine ever put in a boat, and it turned a 5-ft. diameter propeller 300 revolutions per minute. The exhaust is carried out through the stack.

The Arion with 500 h. p. Standard Motor which takes fishing parties out to the banks off Long Island.

The arrangement of the boat is very simple, but sufficient in every way to ensure the comfort of the passengers. The after saloon is 19 feet long with a large center table and settees along either side. At the forward and aft ends of this saloon are 48 lockers for the storing of fish baskets and gear. Forward of the saloon, on either side of the passage leading into the galley, are the men's toilet rooms. The galley extends the full width of the boat, and is fitted with stove, sink, ice-box and the necessary shelves and lockers. Forward of the galley is the large and airy engine room, 18½ feet long, containing the main engine, pumps, air-starting tanks and the dynamo, which furnishes electric lights to all parts of the boat. The berths for the engineers are situated on the port side of the engine room.

Directly forward of the engine room is the forward saloon, 14 feet long, with settees on either side, and the ladies' toilet room is on the starboard side in the after end. In the forward end on either side of the saloon is a companionway leading up to the main deck. The pilot house, which is 7 feet in length, is forward of the saloon and is fitted with steering wheel, compass and overhead chart racks. Forward of the pilot house and below the main deck is the electric windlass for handling the anchor. The anchor chains and other stores are also in this compartment, which is entered by a hatch in the main deck. The tanks for the fuel are under the pilot house, and those for water are under the forward saloon. There are one thousand gallons capacity of fuel, and five hundred gallons capacity for water in the tanks.

The trunk of the cabin is 20 inches high, and is 24 inches in from the side of the boat. These dimensions enable the passengers to sit comfortably on the trunk and fish over the hand rail, which extends the entire length of the boat.

Other commercial boats in the harbor include the Jeanie, owned by the E. I. DuPont de Nemours Powder Co., which is used for delivery purposes about the harbor. This boat is 60 feet long, 10 feet beam and is equipped with a 50 h. p. Standard motor. The E. W. Bliss Company, of Brooklyn, have three 35 foot tow boats built by the Electric Launch Co., which are principally used in connection with the testing of torpedoes in Peconic Bay, Long Island. The Northland is an auxiliary schooner equipped with a 500 h. p. Standard motor and is used for freighting purposes between New York City and the coast of Maine.

The owners of these business boats have one advantage over their motor brethren who run the more pretentious pleasure craft, for while the latter are not adapted for use as working boats, the working boat can often be transformed without much trouble into a very presentable yacht. Thus the owner of the commercial boat may get a double use out of his craft. Many of the boats used for bringing in shellfish to the New York markets carry their loads in barrels in a forward or aft cockpit, which is covered over with a temporary deck. When such a boat has these temporary decks removed, and is treated to a fresh coat of paint and a good polishing up of her brasswork, she makes a good enough appearance for the owner to feel pride in her when he takes out his family and friends for a short cruise on a summer holiday. He also has the satisfaction of knowing that the vessel under his feet is a good staunch little ship that will not have to scurry home at the first threat of a summer thunder squall.

One of these boats in her summer holiday coat of paint may be earning money for her owner at the same time. The $100 fare of lobsters that she has brought into Fulton market between midnight and dawn is soon unloaded, and a hose turned on the decks and cockpit floor is all that is needed to make the boat ready for a day's pleasure cruise up the Hudson or the Sound or down along the Jersey shore.

Harrie and Joe II which runs from Sandy Hook to Stamford, Conn., buying from local fishermen.

The Prize Contest in Questions and Answers.

More Questions—And, of Course, More Prizes

THE interest increases. Each month brings in responses from a larger number of motor boatmen than did the month before, and the value of the contest seems now to be fully appreciated. We are getting right into each other's boats and swapping experiences to the profit of all. Have you, Mr. Reader, contributed to the cause The more the better, you know and—well the prizes will buy a few spark plugs at any rate. There is another chance next month.

HERE are the general conditions:—We will give prizes each month to those who send in the best answers to the questions printed in the issue of the month before, and in order that the department may be helpful to the greatest possible extent, we will give prizes for the best and most practical questions submitted in the next following competition. There will be three questions in each contest each month, and therefore three prizes each, for questions and answers.

For the October contest we offer $10 in cash for each of the best answers to the questions given below, and $2.00 in cash for each of the best and most practical questions submitted for the next contest. Answers should not be more than 500 words long, although we do not insist on this limit if the quality of the answer merits greater length.

THE QUESTIONS FOR THE NEXT ISSUE ARE THESE:

1.—**What tool and spare parts equipment should a motor boat carry, and how should it be kept so that it may always be in the best condition?**
Suggested by C. Petersen, Brooklyn, N. Y.

2.—**What precautions should be taken to prevent fire on board, and what can be done in the way of fire-proofing around the engine?**
Suggested by J. Walter Scott, Detroit, Mich.

3.—**What is the most satisfactory method of classifying and handicapping contestants for a club regatta?**
Suggested by J. C. Clement, New York.

Answers addressed to the Editor of MOTOR BOATING, 2 Duane Street, New York, must be (*a*) in our hands on or before September 15th, (*b*) not over 500 words long, (*c*) written on one side of paper only, (*d*) accompanied by the senders' names and addresses. (Names will be withheld and initials or pseudonyms used if this is desired.)

Questions for the contest should reach us on or before the 15th of September.

THE PRIZES ARE:

For the best answer to each of the three questions given above, $10 in cash. (There are three prizes, one for each question and a contestant need send in an answer to but one, if he does not care to answer all.)

For each of the suggested questions selected for use in the next contest, $2 in cash.

For all non-prize-winning answers published we will pay space rates.

To all who send in answers, prize winners excepted, we will give a copy of Goldie's Book "From Novice to Pilot," a practical treatise by a practical man on navigation and the operation of a motor boat.

Answers to Questions in August Issue.

What Life Saving Equipment is Desirable for an Ordinary Motor Boat and How Should it be Carried?

The Prize Winning Answer.

A VERY satisfactory equipment for the smaller motor boats, i. e., from 18 to 30 feet over all (not including launches carrying passengers for hire whose outfit is specified by law), is made up of half a dozen good block cork life preservers, a good sized ring life buoy and, if your finance will permit, pneumatic or cork cushions for the cockpit seats. In most of the launches now, the seats run along the sides with a fairly wide one across aft just forward of the aft bulkhead. This aft seat is not fastened down but is made a good fit. It will stay in place all right and makes a handy thing to put the life preservers beneath but do not put them flat down on the cockpit deck as they will mildew and spoil very quickly.

Make a grating or rack about one and one-half inches high to pile them upon and if it is an open boat have a piece of 8 oz. duck, painted white, large enough to cover over the top and drop down over the front of the pile, keeping them dry and clean yet in no way hindering anyone's getting them instantly. In case of the boat sinking immediately, they would float to the surface of the water. Do not put them in a closed locker or fasten them in any place where any time will be lost getting at them in case of need.

The ring buoy should be hung by a cord easily broken where the person in charge of the boat can reach it without leaving the wheel, for in most cases he would be the first to know of any accident and in the best position to render assistance to a person accidently falling overboard.

Last, but not least, always have a good boat hook handy and a cool head.

J. W. R., Camden, Maine.

"Three Actual Necessities."

IN case of an accident on the water, either fire, collision or a person overboard, quick action in very necessary, therefore the owner of a motor boat should be very careful in regard to his life saving equipment and should always be sure that everything is placed just where it can be had when needed.

There are really only three actual necess-

(*Continued on page* 34.)

WOLFF II

MOTOR
BOATING

(*Continued from page 31.*)

ities which are as follows: First, there should be life belts which can be quickly slipped on and can be folded up and stowed away in a very small space. These belts can be carried with very little trouble and can be arranged so as to take up very little room by building racks along the sheathing from the floor of the cockpit to the bottom of the seats along the sides. By leaving the top of the rack open it is very easy to draw a belt out and slip it on.

Second, at least two fire extinguishers should be carried, the types using powdered chemicals being the most desirable as they are small and can be put into very small places. These extinguishers should be placed both fore and aft as it may be necessary to fight a fire in two sections at the same time and the handiest place in which to carry them is under the coaming, one on the port and one on the starboard side.

Third, a small rowboat or dingy should be carried, as nine out of every ten persons think first of a rowboat when in trouble on the water. The best way to carry a boat with you is to tow it and a safe plan is to always have your oars in the boat ready for instant use.

ALLAN RITCHIE, Springfield, Mass.

Recommends a Raft and Other Things.

FOR life saving equipment on the small cruiser from 28 to 45 ft. L. O. A., a life raft constructed as follows: Two heavy sections, 2 by 4 inches or heavier, from four to six feet long, depending on size of the craft. These two sections form the end pieces of the raft which is made by slats ½ by 2 inches spaced on four inch centers. These slats to be of just the right length so that the end pieces will come just inside of the hand rail on the top of the main cabin, and to which the raft is lashed. If the crown of the cabin top is excessive, blocks will have to be fitted for the end pieces to rest upon. The life preservers should be carried on this raft with a neat canvas cover over the whole outfit. If they are piled systematically, it will not make an unsightly object.

A more efficient raft can be constructed by using cylindrical tanks for the end pieces, but it means a more intricate job for the carpenter, much more expensive, and will occupy a large space, and be more unsightly, and hardly worth all that.

For the open launch, well, there is really nothing to be suggested but life preservers, —and there are never enough of them for the number of people carried, on account of limited space for storage—for the accident always happens when the craft is overloaded. But as they seldom have time to put on the life preservers, a detached seat may sometimes help out.

Providence seems to be the best preserver for small craft, for of the thousands of them, many poorly built and poorly protected against fire, very few come to grief.

J. WALTER SCOTT, Detroit, Mich.

Curved Pegs for Life Rings.

ON the ordinary motor boat small ring buoys are most suitable. They can be quickly thrown to anyone who happens to get overboard. At least four should be carried in open boats on slightly curved pegs or hooks, two forward at either side of the steering wheel and two as far aft as convenient. Where they are carried loosely in this way they are almost certain to become released in case of sudden swamping of the boat from any cause and to be left floating on the water.

In addition, all boats should carry cork jackets, which in open boats should be laid flat on the seats under the cushions. In cabin boats, doughnut buoys should be carried in the pilot house and on the after end of the main cabin outside and jackets may be carried overhead between the deck beams held in place by light battens, care being exercised to have the battens light enough to be broken with the bare hands.

Personally I prefer to keep jackets in lockers so marked, for in most cases there is warning enough to enable the occupants of the boat to get jackets from almost any place or else the warning is so late that they could scarcely put jackets on if they had them in their hands. C. J. FOULKS, Corolla, N. C.

Among Other Things, a Hand Pump.

THE life saving equipment of an ordinary motor boat should consist of at least as many life preservers as there are women in the boat. These should not be carried in lockers or strapped down where they are not easily accessible. When the time comes to use them they are wanted at once and the time spent in searching in lockers and undoing buckles may mean loss of life. In most of the smaller boats it is a problem where to keep them, and this the individual can do to his own liking, and in accordance with the arrangement of his boat. Many carry them on the stern deck of their launches, others on the forward, some put them under seats where they can easily be slid out, others pile them in some part of the boat where they take up the least room.

Carrying life preservers is not only a prevention against loss of life of those in your boat, but they may also be used in giving aid to others in distress.

A whistle or horn and a fog bell should be carried. These usually are placed near the steering wheel, and either fastened to the deck or to the combing. Some prefer to have them movable. An oar or paddle is at times very useful although it does not come under this head.

In my opinion a hand pump should be carried always, regardless of whether the engine pumps bilge water or not. Any boat may spring a leak at any time and as most of the engines in open boats are very low, the danger of water entering the carbureter or vaporizer is very great. A good pump would help considerably and unless the leak was very large the engine could be kept running while working the pump.

Of course not carrying the required lights is criminal. No matter how short the run is, always have your lights, life preservers, etc., with you. Don't *think* you have them! be *sure* you have.

R. S. BATES, Alexandria Bay, N. Y.

Strong on Fire Extinguishers.

THIS is or at any rate should be a very important question to the motor boat owner, since upon it rests not only the safety of his boat but also the safety of himself and guests.

It seems strange that so many owners should disregard this portion of their boat's equipment, but although I have had the privilege of inspecting a great many motor boats I have found a very few which come up to my idea of what a properly equipped boat is. Indeed in one 35 foot boat which frequently carries 18 or 20 passengers I found one nine-foot dingy, no life preservers, no life buoy, no oil bag, not even a 59 cent powder fire extinguisher. Upon speaking to the owner about this he glibly replied that "I never had an accident and anyway I haven't room for so much stuff."—Ye Gods!

On every boat there should be if possible a life preserver for every person. If this takes up too much room there should at least be enough to give every two persons one. At least one life buoy should be carried also. I prefer the 21-inch size.

On a small cruiser the best thing in the shape of a life boat is a 16-foot steel rowboat; preferably a double pointed model. In the case of a cabin launch it is easy to carry the life preservers on slats suspended from the roof. The boat might be suspended from davits or placed upside down on the cabin top out of the way.

In the engine room of my boat I have two fire extinguishers, five gallon size, also six grenades stored in the locker. In the galley is a 3 gallon fire extinguisher. In the pilot house a 3 gallon one and in the cabin a locker containing two 5 gallon extinguishers, 6 dry powder ditto and an axe. The other extinguishers are placed in cabinets built especially for them.

Every boat ought also to have a bilge pump and a hand fire pump, the fire pump being placed in the cockpit. A pump with a one inch discharge is best. In addition a 20 gallon tank should be fixed on the roof over the engine room and fitted with an arrangement similar to the sprinkler system seen in large buildings operated by fusible plugs.

H. H. LONG, Fort William, Ont., Can.

Which is the Best Location for the Engine in a Cruising Motor Boat of 40 Feet or Less; Forward, Amidships or Aft?

The Prize Winning Answer.

THERE are three advantages in having a motor forward; complete protection, convenience and facility for practically a straight line shaft. Amidships there are only two; protection and convenience. In either position the advantages are outweighed by the heat of the motor and the odor of oil and gas.

If the motor be placed just aft the cabin bulkhead so that the flywheel is the only part in the cabin, the only thing sacrificed is the straight line shaft, as convenience and a reasonable certainty of protection from the weather are retained, and at the same time the heat and odor in the cabin is done away with. Furthermore, the lower half of the bulkhead may be made gas, oil and water tight thereby eliminating the chance of repeating a Kitcinque disaster (oil fire under the cabin floor).

The engine hatch should be built with a lifting top—louvers near top for rapid escape of heat and odor, the whole hatch to fit snugly over a coaming at least six inches high from the cockpit floor. We would then have good protection from spray or cockpit waste, in addition it becomes a first-class fair weather table. Such an installation is complete, and if the cabin opening be fitted with a set of sliding doors made of light galvanized iron—even canvas will do—one has the satisfaction of knowing that he has eliminated from the cabin a heating apparatus generally working overtime, not to say anything of the other advantages secured.

C. PETERSON, Brooklyn, N. Y.

Advocates Amidships.

IN a boat of this size, much often must be sacrificed to obtain certain results desired by the individual owner. One man will desire seaworthiness above all else, another well ask for large cabin accommodations regardless of motor accessibility, while a third may demand a little more speed than is usual in his particular style of boat. In fulfilling these various requirements the placing of the motor has much to do and the first and hardest work of the designer is in educating his prospective customer to the impossibility of giving him the accommodations of a ninety footer in a boat of less than 40 feet long.

The one prime factor in a cruiser, and one which will make it a joy forever is its ability to go and to keep going in all kinds of weather and to obtain the best all around results I believe the best place for the motor is amidships even though this means giving up to it the best part of the boat. Moreover, the fuel tanks should be placed near the motor as possible and consequently near the midship section of the boat allowing the use of a short length of feed pipe. Then no matter how much the boat may toss and roll the motor is subjected to the least possible movement, gets its supply of gasoline regularly and keeps on the job, while in the event of repairs being necessary there is room to do the work.

Placing the motor amidship also affords space in the engine room for some sort of small work bench and a good strong vise, and the man who has once been obliged to make repairs in a good heavy sea with his engine dead and his boat tossing about like a cork will realize that this room is worth many times over the pet idea he sacrificed in order to obtain it.

F. A. BABCOCK, Seneca Falls, N. Y.

Says it Depends on the Type of Boat.

IN the installation of an engine in a 40-foot cruiser much depends on the boat in which the engine is to be installed. In a bridge deck cruiser the motor should be 'midships so as to minimize the length of connections to the controlling mechanism on the bridge. The writer is a firm believer in the one man control system as combining reliability, quickness and safety with the advantage of being able to run the boat alone without the bother and cost of an engineer.

If, however, the boat is steered from a pilot house as in a glass cabin cruiser the motor could be put in the bow as in some of the prominent makes of runabouts and the controls fastened to the bulkhead alongside of the wheel or it might be placed directly aft of the pilot house and a lever operating the reverse gear placed by the wheel and connected with the gear by a rod running beneath the floor overhead.

In boats which are steered from a cockpit aft the motor might be directly in front of the cockpit bulkhead on which the controls may be placed or it might be put under the cockpit floor if there is room enough.

In any case no matter where the motor is installed it should always be separated from the rest of the boat by water tight bulkheads which may be lined as is the case in the writer's boat with sheet steel to make them fireproof.

It is, however, really a matter of the owner's own choice as to where the motor should be placed. However, it should be placed where it will take up least room and where it will be easily accessible, under all conditions.

H. H. LONG, Fort William, Ont., Can.

At the Point of Greatest Beam.

THE distribution of weight in all boats is of the utmost importance, as upon this depends the trim both when at rest and in a seaway.

It is therefore advisable to place the greatest fixed weights where there is the greatest buoyancy and this depends wholly upon the lines of the boat; some boats will have this point just forward of amidships, others just aft and still others exactly amidships.

As a general thing with boats of 40 feet and under this point is just aft of amidships and with the engine installed in that position the boat will trim properly when at rest and act nicely in a seaway. In approaching a swell the boat will rise to it and leaving it she will not pound but will lend more readily to the swell of the sea. Therefore always install the engine where there is the greatest beam. Regardless of whether it be forward, aft or amidships.

H. T. S. ELLISON, N. Y. City.

What Method of Discharging the Exhaust in Motor Boats is Most Efficient in Reducing the Noise and Odor Without Impairing the Power of the Engine or Interfering with the Interior Arrangement of the Boat?

The Prize Winning Answer.

THE choice of a muffler must be made from a study of the circumstances governing each case. That an arrangement of apparatus gives complete satisfaction on one boat does not necessarily mean that it will be equally successful on another.

For open launches an expansion chamber and a large pipe leading aft to the stern and out under water is a good and simple method. The difficulty of water getting back into the pipe and filling the cylinders, can be overcome by running the exhaust pipe in a straight line (under the side seats) from the motor to the outboard fitting. This will be well above the waterline and have enough pitch so as to drain easily. A relief cock should be fitted to assist in starting the motor. The loss of power, if any, will be slight, in fact in some cases it is claimed more power can be obtained with the submerged exhaust than without it.

On high speed runabouts all of the cooling water from the motor can be let through the muffler, but the piping must be in a straight line without any quick bends where the water is likely to coiect and choke the exhaust. A completely water jacketed exhaust from the motor to the outlet at the stern is an efficient device. The straight lead aft to the stern will cause but little back pressure if the pipe is of good size.

A water jacketed muffler or one with the cooling water running through it with the exhaust outlet under water and near the engine, is a good arrangement for cabin cruisers. Another way would be to wrap asbestos around the exhaust pipe and lead it under the seats or berths in the cabin, under the flooring in the cockpit to the muffler in the stern and out. In this way the piping would have a fairly straight lead with no sharp turns and would not interfere with the accommodations to any extent. Letting the exhaust out at the stern is good practice as there is hardly a chance of the odor being blown over the occupants of the cockpit.

On the larger motor boats or yachts the best and most popular way is through water jacketed mufflers in a false funnel or stack. While a stack will improve the appearance of many yachts it cannot be made a thing of beauty on some as can be seen from two of this year's Bermuda racers.

Sharp turns, bends or ells in the exhaust pipe should strictly be avoided as they decrease the speed of the boat a great deal.

L. KROMHOLZ, New York City.

A Believer in the Under Water Method.

FOR reducing the noise and odor of the exhaust in motor boats and at the same time increasing the efficiency of the motor, the submerged exhaust system is without an equal.

By this system the exhaust is conducted from the motor to the expansion chamber, which must be located above the load waterline of the boat and from thence to a special fitting or nozzle, located in the bottom or side of the boat below the waterline.

As it is desirable that the flow of the exhaust through the exhaust nozzle be continuous, the expansion chamber must be placed between the motor and the nozzle, and should have at least six times the cubic capacity of the motor cylinder.

Before the exhaust passes overboard it must be cooled and contracted to its original volume, otherwise the contraction will take place beneath the boat and result in an annoying jar to the hull. To accomplish this, the general practice is to lead a part of the circulating water into the top of the expansion chamber or the exhaust pipe leading to it, but as the circulating water is somewhat heated, it is better to pump cold water direct.

The pipe leading from the expansion chamber to the exhaust nozzle should be larger than the exhaust pipe, and the exhaust nozzle should have the same area as the enlarged pipe.

The exhaust nozzle should point aft and be located away from the propeller, for if located in front, it tends to slacken the speed of the boat.

To facilitate starting the motor and prevent water being drawn into the engine cylinder in case of back-fire, a three way cock should be placed in the exhaust line. This cock should be so arranged as to have the exhaust opened to the atmosphere and closed to the sea when starting the motor. The pull exerted on the exhaust of a boat equipped with the submerged exhaust system, has the effect of increasing the speed of the engine. In some cases this increase has been as much as 50 revolutions per minute.

J. B. SADLER, Navy Yard, Norfolk, Va.

His Own Under Water Outlet.

I HAVE a torpedo stern launch 35 feet long and I have it equipped with an underwater exhaust which completely does away with noise and odor. The arrangement consists of pipe connections straight down through the bottom of the boat close to the stern and ending in a 45° elbow; which in turn is covered with a plate of brass, shaped like a wedge and 6 inches deep at the forward end and 2 inches deep and 8 inches wide at the aft end. I had one of these covers over the exhaust pipe torn off (because the material used was too light) and when I replaced it by a new one I reduced my running time for 8 miles from 52 to 49 minutes or a gain of one-half mile in speed. There is no noise to be heard in the boat except a slight rumble of vibration and the click of the ignitor rods. I use no expansion tanks whatever but the exhaust pipe is about 16 ft. long and 2½ inch pipe size. My engine is a 2-cylinder, 2-cycle, with 5¼-inch bore and 6½-inch stroke.

C. E. BERGBORN, Fort H. G. Wright, Fisher's Island, New York.

A System Free From Obstructions.

I FIND the following manner of connecting the motor exhaust the most effective in reducing the noise and odor, and least liable to intertere with the interior arrangement of the boat.

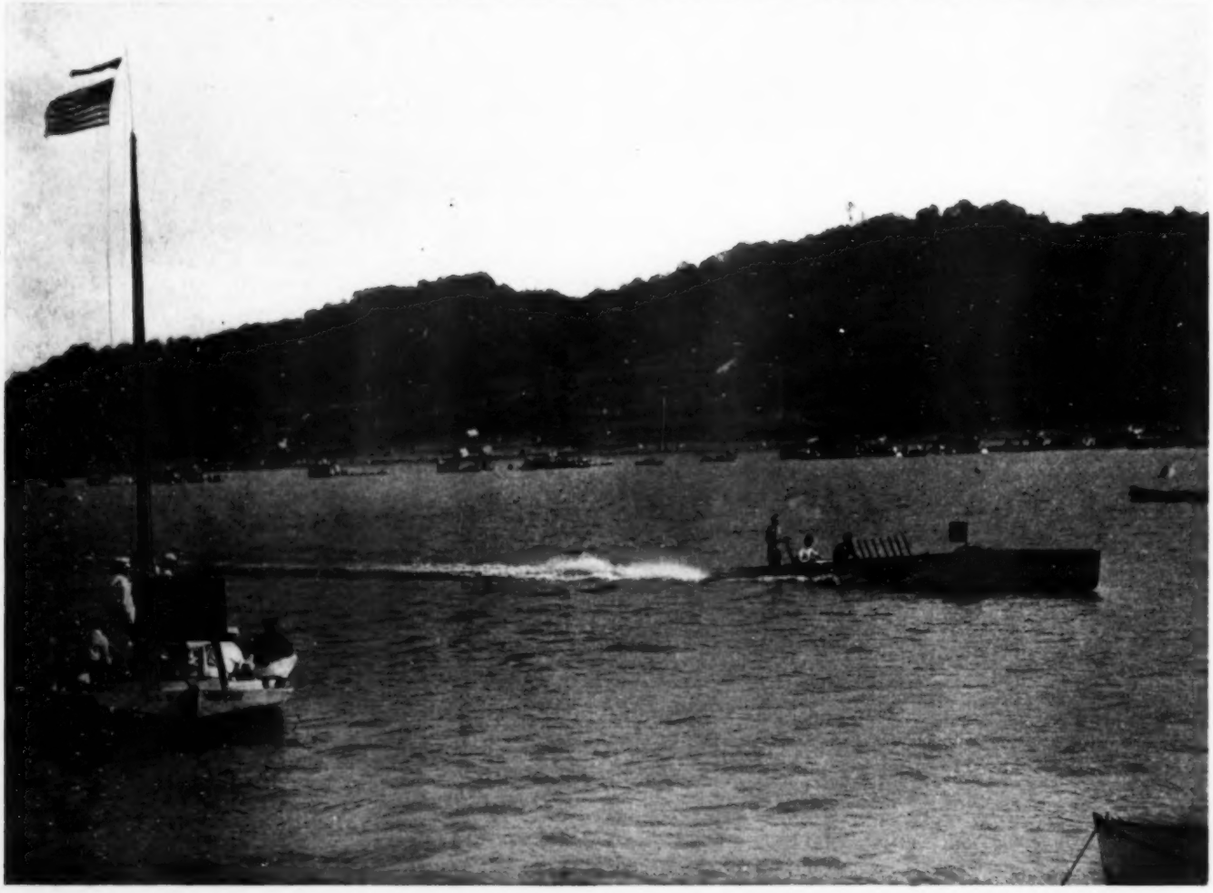
Into the exhaust header of the motor, I inserted a short nipple, about 10 inches long, then a 45 degree elbow was introduced to give a downward slant to the pipe. Two nipples of sufficient length and a lip union between them carried the line to just below the flooring, where another 45 degree elbow was put in to give a straight run, and the line carried on back under the floor, parallel to the propeller shaft, to below the rear deck where the muffler was located. A short nipple, lip union, and another nipple with extra long threads and two lock nuts served to carry the line from the muffler to the outside of the boat, just above the waterline.

The cooling water from the engine was carried in a line directly over the exhaust pipe and tapped into it, where the line begins to slope to the bottom of the boat. This keeps the exhaust pipe almost cool enough to touch and the water serves to assist in deadening the noise.

By this method a clear passage was kept on all sides of the motor and only a few feet directly in the rear is obstructed, and the reverse gear is located in part of that space. This method serves its purpose well as it is possible to carry on a conversation aboard in ordinary tones, and one is not annoyed by the smell of burnt gasoline and oil being carried into the face as is in the case when the exhaust is carried through the side of the boat. In testing for back pressure on the engine, as the one in this instance is a 4-cylinder, 2-cycle, 16 h.p., by using a revolution counter and stop watch, we could not detect a greater difference than 5 r. p. m., than when the engine exhausted free in the open air, and for this reason we did not consider it necessary to install a cut-out valve in the line.

M. D. GANNON, Sewickley, Pa.

(*Continued on page 43.*)



Racing on the Ohio.—Above a general view of the regatta of the Ohio River Launch Club at Cincinnati, and below, Brer Fox II, which carried off second honors.

Hoosier Boy, the new fast boat in the Middle West, which did things at Cincinnati.—Two points of view.

See Results of Regatta on page 47.

New Motor Boat Designs.

The Newport Cruiser.

THE Newport Cruiser has been designed by Frederic S. Nock, of East Greenwich, R. I., and represents a new type of small cruiser which is not only capable of accommodating a party of six or seven persons upon an extended cruise, but in addition possesses certain advantageous features not usually found in a boat of this size, 42 feet over all. These features are the bridge deck forward and the after state room shown in one of the two arrangement plans.

The bridge deck forward is a very desirable feature of the boat, as it gives a comfortable seat with a wide outlook for the steersman or the owner and his family or friends. In addition, the bridge adds very much to the appearance of the boat as it breaks the long straight lines of the raised fore deck and cabin trunk and gives the boat a more yachty appearance than is possessed by the ordinary trunk cabin or raised deck cruiser.

The state room is so arranged that while it reduces the size of the cabin it does not lessen the sleeping capacity and in addition it provides an increased locker space. Its chief advantage, of course, is the privacy it affords, which is very desirable in case the owner's family accompanies him upon a cruise. There is a double berth in the state room and two extension berths in the main saloon giving sleeping accommodations for six persons in all. If the state room is omitted the main saloon is made much roomier but there is no increase in the sleeping accommodations as the two added berths are both single.

The interior arrangement admits of ample space to carry a paid hand, and this part of the boat is situated forward and can be shut off entirely from the rest of the boat. There is a built up berth with lockers under same and a yacht closet. Aft of the crew's quarters there is a good wide space the entire width of the boat forward of the motor, the latter being situated under the bridge deck. The engine can be controlled entirely from the bridge even to the starting if so desired.

The engine room is of good size and there is ample locker space on either side of the engine. The reverse gear projects under the stove locker, but can easily be reached for adjustment or oiling by removing a door under the stove locker or one in the toilet room, consideration having been given to this contingency. On the starboard side there is a fair sized toilet room with a closet, corner lavatory, linen and clothes lockers. On the port side there is a small ice-box, dresser, sink, stove locker, dish lockers, etc.

At the forward end of the saloon there is a full length clothes-press on either side. Upon either side are extension berths and under these are fitted the water tanks, piped to the galley and the toilet room. An extension table affords ample room for six persons to dine and there is plenty of locker space on the port side of the companionway steps. The foot of the berth in the state room projects under the cockpit deck for a short distance, but not far enough to cause any inconvenience. Under the cockpit there are two cylindrical tanks for the gasoline supply and also plenty of stowage space for folding chains, life preservers, etc.

The entire interior of this craft is finished in cypress and mahogany moulding, the main saloon, state room, and toilet room being panelled, and the galley, engine room crew's quarters, etc., finished in staving. Car has been taken to select the material for the rails and stiles of light colored stock and the panels of a darker grade, which forms a very pleasing contrast. All the exterior bright work, except the deck, is finished in mahogany.

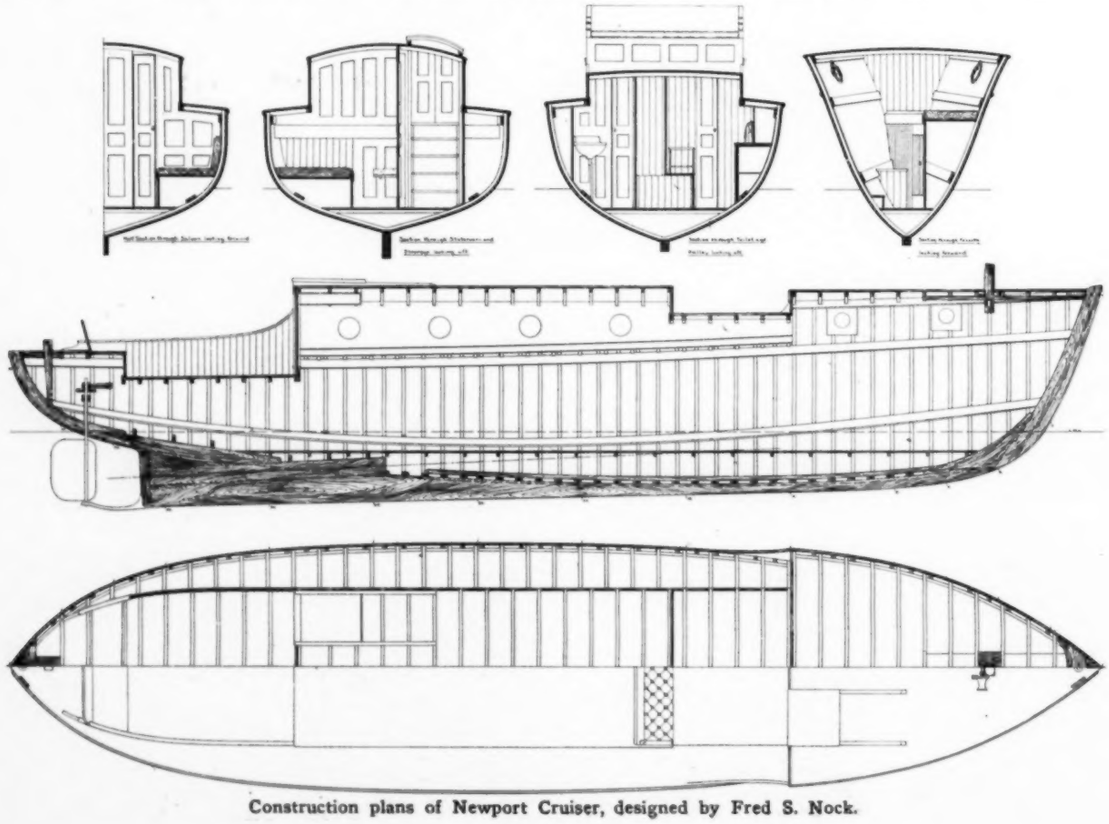
The original boat built from these plans has round windows, but for Southern use it would be an advantage to make the windows in the cabin drop into pockets in order to have plenty of air, although ample ventilation is provided by cowl ventilators and scoops for the air ports.

The construction of this craft is moderately heavy, the frames being 1⅝ x 1⅝ inches spaced 9 inches from center to center, the keel, stem, horn timber and stern crook of oak, sided 4 inches, the planking of yellow pine, finished 1 inch thick, and the deck of white pine 1⅛ inch thick. The clamps, shelves, etc., are of yellow pine. The length over all is 42 feet, the extreme breadth, 9 feet 6 inches and the draft not over 3 feet, making the boat well adapted for Southern cruising. There is over 6 feet head room clear of the beams.

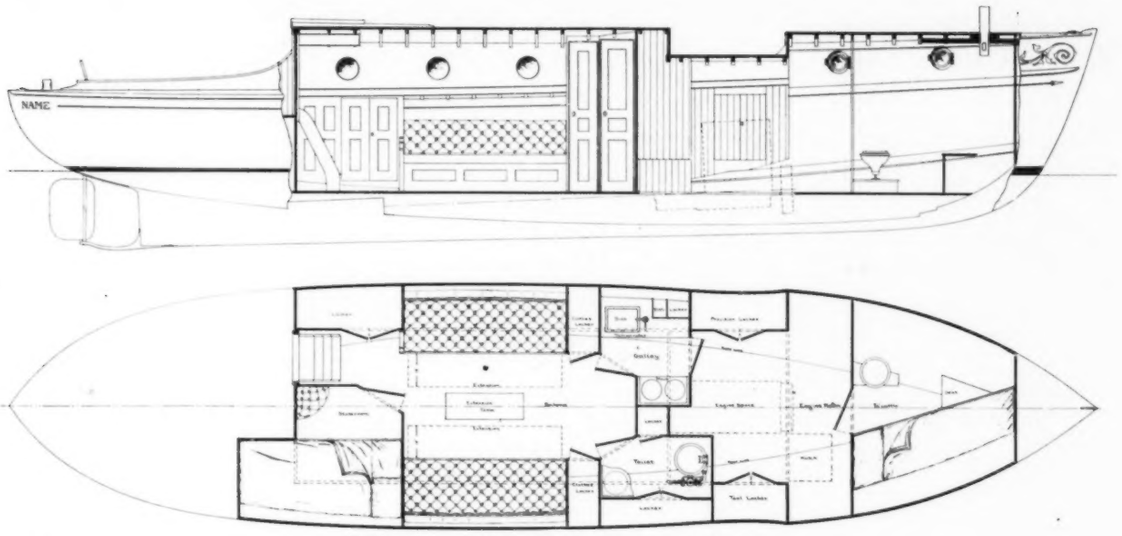
A New Producer-Gas-Driven Boat.

A DUMBARTON (Ireland) firm has recently completed a new producer-gas-driven motor boat. This boat, the first of its type built on the Clyde, is a 40-foot mahogany cruiser of 30 horsepower with a speeds of 10 knots. The motor is of the usual four-cylinder gasoline type, and has been specially adapted for producer-gas. The official trials of the launch were carried out in the presence of a number of prominent Clyde yachtsmen and gas engineers interested in gas-propelling power. Although the weather conditions were most favorable, the experiment was considered satisfactory.

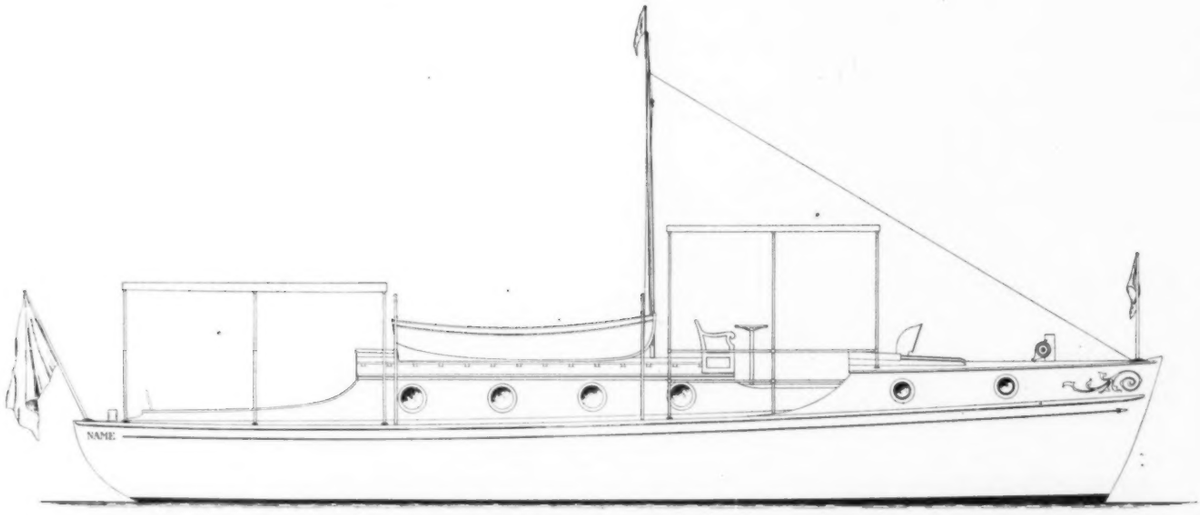
The cost of coal used is given at 5 cents per hour. The boat carries fresh water in her bilge tanks to supply the vaporer for 36 hours continuous running, and sea water has been found quite suitable for passing through the cleaning and cooling scrubber. One report says the engine showed a remarkable flexibility on suction gas, while another holds the view that the greatest objection to the engine is its lack of flexibility, an objection which in time may be overcome.



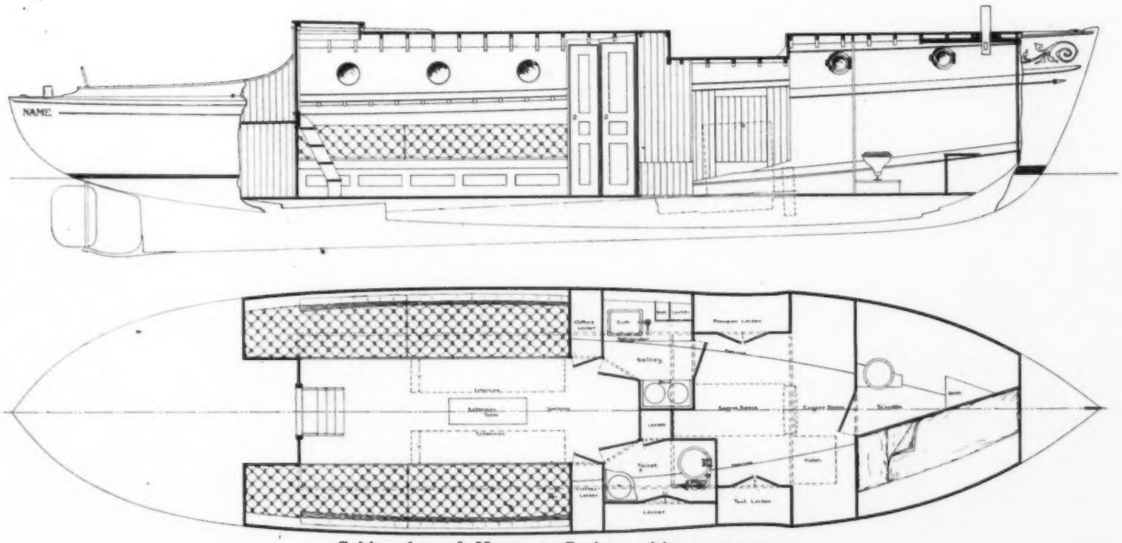
Construction plans of Newport Cruiser, designed by Fred S. Nock.



Cabin plan of Newport Cruiser with stateroom.



Newport Cruiser. Designed by Fred S. Nock, East Greenwich, R. I.



Cabin plan of Newport Cruiser without stateroom.

Savallo—An Unusual Boat.

SAVALLO was designed by Fred D. Lawley and built by the George Lawley & Son Corp., of South Boston, for Mr. C. K. Bispham, of Philadelphia, Pa.

Mr. Bispham wanted a boat to use as a sort of "runabout" that could "go some," to be built regardless of cost, in order to have the best, and he got it, for when she was launched early this season, her builder considered her one of the finest pieces of work he had ever turned out in the line of a small boat.

Savallo is 50 ft. o. a., 6 ft. beam and 18 in. draft; is built of oak frames and double planked with mahogany.

She has a roomy cockpit 10 ft. long, aft of which is a water-tight bulkhead. The cabin is a very neatly arranged affair, built entirely of mahogany both inside and out, and contains transoms on each side, with ample drawer room underneath, and has a buffet and ice box forward.

The gasoline tank with a capacity of 112 gals. is forward of the cabin, and just forward of the tank in the engine cockpit is the operator's seat, with locker underneath.

The boat is steered by wheel, which is also fitted with levers which control the engine. She has a 180 h. p. Jencick motor, built by the Jencick Motor Co. of Port Chester, N. Y. The engine is easily gotten at by lifting covers which swing up on each side, and forward of the engine cockpit is a water-tight bulkhead with a 14 in. manhole.

She has two exhausts, one under water, and one through two small stacks projecting through the covers of the engine, and which are not shown in drawing.

She is now being used by her owner on Lake Sebago, Maine, where she is said to have repeatedly done better than 30 miles per hour over a measured course. Mr. Bispham also uses her a great deal for fishing, he being an enthusiastic follower of Izaak Walton.

Susie R—A 50-Footer.

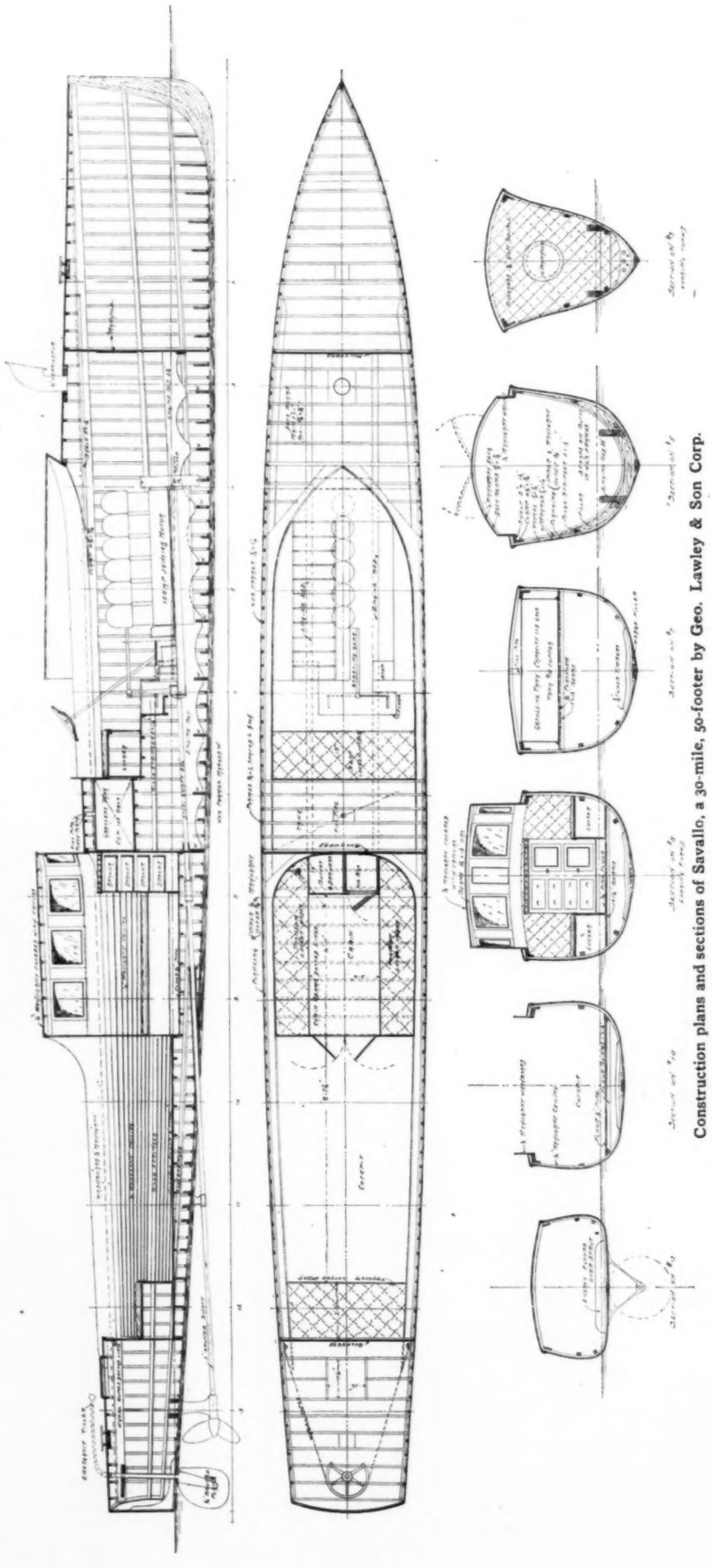
Delivery has been made to Theodore T. Reboul of New Orleans by the Mathews Boat Co. of the cruiser Susie R. She measures fifty-one feet over all, has ten feet of beam and has thirty inches main draft. She is equipped with a 40 h. p., four-cylinder Hercules engine, and is expected to make from ten to twelve knots per hour, as she did on her trial trip in Southern waters.

She has a hunting-cabin flush-deck forward, a bridge amidships and a spacious trunk cabin and cockpit aft. The engine, which is located immediately under the bridge, is controlled from the bridge by the steersman. The pretty and complete little galley, toilet and bath are located in the forward cabin, as are also the crew's quarters. The after-cabin, or main saloon, will sleep eight persons comfortably and more if crowded, having extension berths. The entire craft is lighted throughout with an eighteen-light Dayton electrical outfit, supplied by batteries and dynamo. The searchlight, side lights, anchor and riding lights, cabin, deck and engine-room lights are all furnished current by this electrical equipment.

The Susie R. is planked with 1¼ white cedar, copper fastened to oak steam-bent ribs. All heavy joints are fastened with Tobin bronze bolts, and all hand-rails and deck hardware is of polished brass. The interior is finished in African mahogany, as is also the deck.

Red Head—A 30-Foot Cruiser

The Bridgeport (Conn.) Motor Co. has just completed for Miss Irene Franklin a 30-foot cruiser which has been christened Red Head. She is designed for cruising and is built to secure stability and seaworthiness, no attempt being made for speed. In fact, she is not expected to do more than 10 miles an hour. She is of the flush deck type, 30 ft. long, with a beam of 8 ft. 10 in. at a 3-ft. draft. She is fitted with a 14 h. p. Bridgeport motor.



Construction plans and sections of Savallo, a 30-mile, 50-footer by Geo. Lawley & Son Corp.

Bows and Sterns for Motor Boats.

Illustrating the Different Types Used Since the Advent of the Gasoline Motor. The Effects on Performance of the Various Designs.

By Frederick K. Lord.

FROM time immemorial ships of all nations have had much care and thought expended upon the shape and ornamentation of their bows and sterns. In the olden days when shipbuilding was a mystic art and the people wild, romantic and superstitious, the placing of a figurehead on a boat was taken seriously by the sailor as a thing to bring good luck to the ship and protect him from the terrors of the deep. The love of ornament was probably the prime motive, but superstition also played its part. The later centuries produced less and less general ornamentation as the times progressed and the ships became more efficient.

The beginning of the last century marked the final decline of serious decoration, and at the present day all that is left are a few scrolls and occasionally a figurehead. It is to be regretted that these fine old ornaments with their romance and tradition are gone; but history repeats itself and we may yet develop new decorations along more simple lines to match the clean cut and simple form of the modern hull.

The heights of bows and sterns present one of the most interesting examples of development in shipbuilding. Centuries ago the sterns were very much higher than the bows while today it is just the opposite. The reason for this reversal is apparent. The early ships could do no better than sail before the wind, consequently they always had the sea aft. To stop its coming aboard, the stern was built up to act as a barrier and prevent the ship being "pooped." The waterlines were fine aft to allow the sea to break easily on the hull and prevent it from yawing the ship. The lines forward were full, to hold her head up. In other words the underbody was shaped to take seas stern on while the modern ship is formed to take them bow on. As the ships grew more efficient and became able to go slightly to windward there was danger of the seas coming over the bow. To prevent this the fore part of the vessel was raised and the waterlines made sharper in order to allow her to take the waves easily. As the ships developed and improved in ability to look closer to the wind, just so did the sterns come down and the bows go up to meet the head-on impact. And the waterlines changed from blunt to sharp forward. They were not filled out as much in proportion aft, as the increased speed required an easier run, but the whole idea of shape of waterline and freeboard suffered a complete reyersal and offers a good example of change of structure to meet new conditions.

The introduction of the steamboat created a new proposition and builders were at a loss at first as to what sort of ends to put on these vessels. Odd and unusual shapes are signs of undevelopment and with the steam as with the sailing ship there were some fearfully and wonderfully built ends before the conditions were clearly understood and successfully met.

Coming to the latest marine creation, the small and relatively high powered motor boat, we arrive at one more problem to solve, which is the driving of a very small vessel at very high speed. Our knowledge gained from ships and steam boats has been of immense help and the problem is being rapidly solved—is solved, in fact. The development of motor boats in a decade has been wonderful and more advance has been made in them in twenty years than in any two centuries of sailing ships. We now know what effects different bows and sterns have and the remaining thing is to hit the best combination to suit certain requirements. For example we know that the bow should be higher than the stern and also that this height varies with the type and purpose for which that boat is intended. But just what the ideal height is in each case is what men are trying to find out. In other words, motor boat design has already reached the stage where it is a matter of refinement and nice adjustment of proportions. I do not mean to say by this that there is not still opportunity for improvement in types.

In the modern yacht the hull profile is the predominating feature that strikes the eye. We look at a motor boat and immediately notice whether she has a pleasing sheer and nicely proportioned ends. The average motor boatman does not know much about hull design but he does know what shape bow he prefers to see on a yacht.

Just what is the handsomest and best in bows and sterns is a thing impossible to state positively, but as regards appearance the law

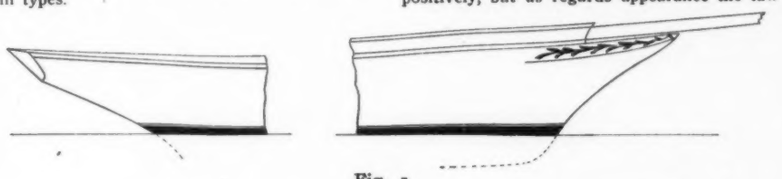


Fig. 1.

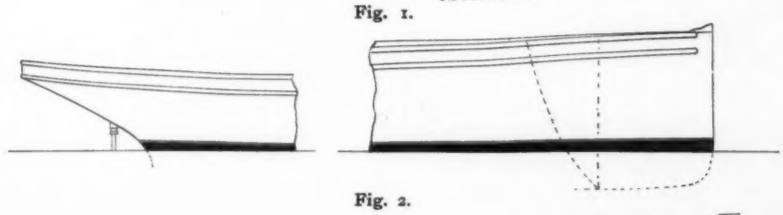


Fig. 2.

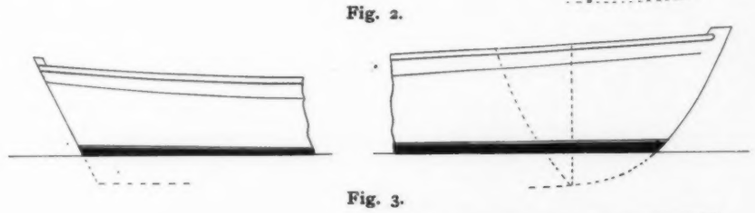


Fig. 3.

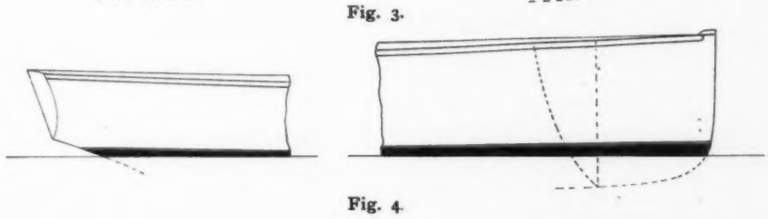


Fig. 4.

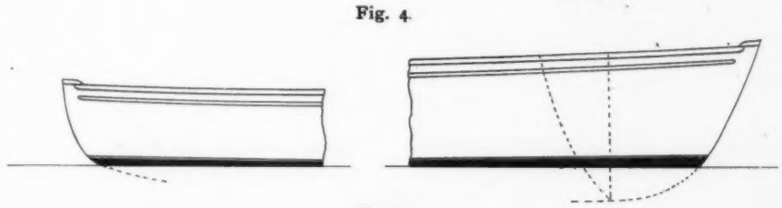


Fig. 5.

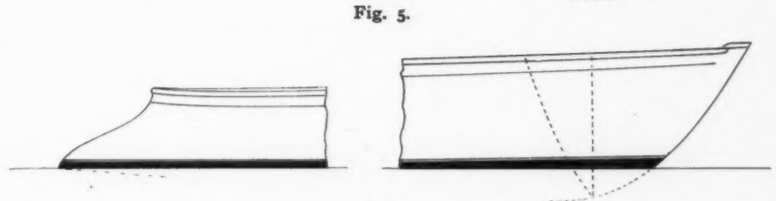


Fig. 6.

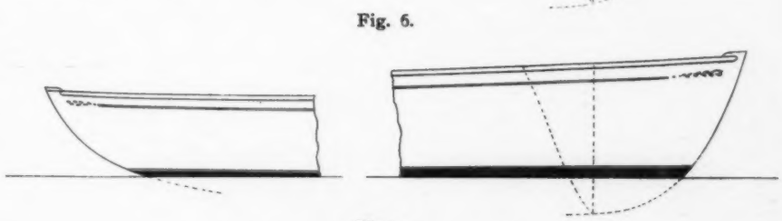


Fig. 7.

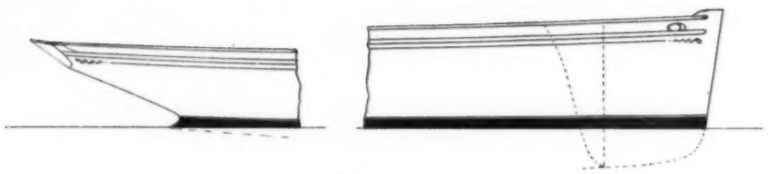


Fig. 8.

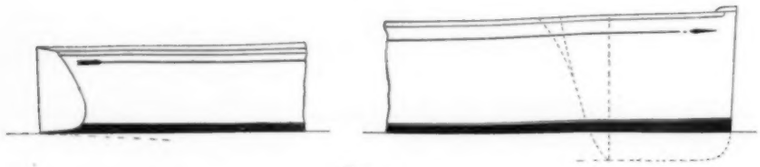


Fig. 9.

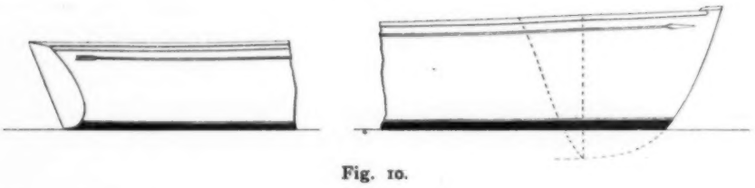


Fig. 10.

of the survival of the fittest has weight. When we see a person we can say whether his nose is too long or badly shaped because we have seen so many noses that we know what a good one looks like. And by the same token it is getting so now that we can pick out a good bow and stern. As a certain shaped nose harmonizes with a particular type of face just so is there a proper bow and stern for a certain type and style of boat. The thing to avoid is getting the wrong nose on the right face. Fortunately the motor boatman is becoming pretty keen and will no longer stand for badly proportioned ends on a boat. Racing rules affect the ends considerably, especially on speed boats and oftentimes were it not for that cause, better ends could be used.

The cuts show about thirty of the bows and sterns that have been used on motor boats since the advent of the gasoline motor. There are many more, but these are the ones that have been used most. The early type, Fig. 1, was simply an adaptation of the sailing yacht ends. Not having any particular ideas on the subject, this type was used for a starter. For large boats which had pole masts and some rigging the effect was not bad, but as all this was merely for looks it was gradually discontinued and the fantail type, Fig. 2, was created. This was used almost universally on the smaller launches and is occasionally built today. It was fairly good for low speeds but when more power was used it would squat badly. In an attempt to improve and overcome this the lines were carried out at the stern and a transom used as in Fig. 4. This style hung on for some time and is still in use today.

Following this came a period of rapid experimentation and development and many new sterns sprang into existance. Previous to this most all the bows excepting the clipper type were practically plumb. Among the ones often used was the type shown in figure 6, to which the name of torpedo stern has often been applied for want of a better one. The underbody had an easy run and terminated in a point, the deck was forward of the waterline and the stern profile swept up to it in an easy reverse curve. This curve was varied in all sorts of ways. Such a stern leaves the water clearly but has nothing else to recommend it, being expensive to build and hard to hold true and also badly adapted for backing. The bows of these boats generally raked very much forward with sharp sections. They were much better than the sterns although many of them had too much overhang. There

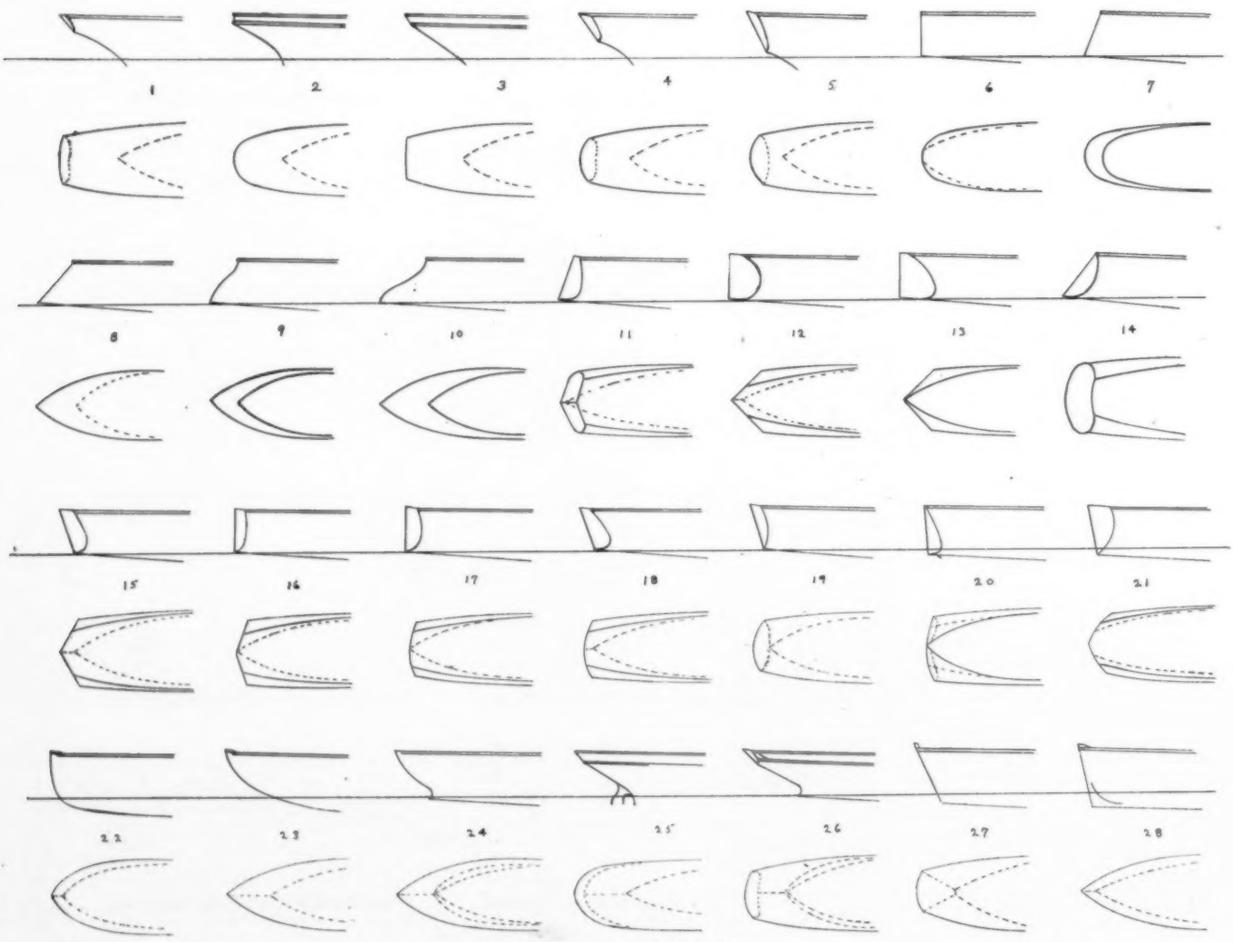


Fig. 11.—Nos. 1 to 28 inclusive.

is nothing to be gained by raking the bow over forty-five degrees, and most all of the best looking bows of today are under thirty.

A type that was a step forward and is still used extensively is that shown in Fig. 5. The bow has a moderate rake with slightly rounding sections. The stern is of the double ended type and is sometimes called canoe or compromise stern. This stern is a very good one for cruisers and acts well in a following sea. The up-to-date development of this type is shown in Fig. 7. Here the bow has an easy rake forward with a moderate forefoot and sections somewhat full underwater with a slight flare near the deck, which is fairly wide. This makes a very fine bow, with just the right amount of buoyancy and is very dry. The stern is carried out in long easy lines with a clear cut, graceful sweep of profile up to the deck. The deck is fairly broad, too, at this point, the idea being somewhat like the bow. This makes a splendid stern for all moderate speed boats and is very easy in a seaway, breaking the water quietly and allowing none to come aboard. It does not drag much and is highly efficient for large cruisers up to twenty-four miles.

A type sometimes used on larger boats is that shown in Fig. 8 and it makes a handsome looking finish. The bow is straight with a slight rake forward. The sections are U-shaped under water and considerable flare is carried near the deck which allows the boat to run along easily, and the flare keeps spray off and prevents pitching too deeply. The stern is finished as in a steam yacht with the exception of the underbody.

In order to stop squatting and to prevent air getting to the propeller, the lines are run out flat just under the water. At the waterline they are pinched in so that the boat appears to terminate in a sharp waterline, as in a steam yacht, but really is flat for all practical purposes. Some use this style of overhang but cut out the flat part and fair the lines right up as in the usual yacht practice.

For speed boats a typical set of ends is illustrated by Fig. 9. In order to reduce weight and get a maximum load waterline the ends are kept plumb. The bow is straight and sharp, the forefoot generally quite deep and the sections below vary with the ideas of each designer but more often incline to the U type. The bow is flared, and many times not, as indicated by the double line. The sterns have all sorts of shapes for a finish but one of the most popular is the V type or Normand stern, modified. This makes a very good stern and well adapted for its purpose.

For the fairly high speed open launch Fig. 10 shows a good set of ends. The bow has moderate rake and the section just flare enough to throw the spindrift away from the occupant. The stern has a rounding transon with some rake to look better, harmonize with the bow and deflect following seas or spray when backing. The section has some dead rise and tumbles home at the deck. This makes a very neat and efficient hull for the semi-speed runabout type. Figure 3 shows a development from the surf boat and Swampscott idea. These boats are double-ended and have fairly fine lines and are very seaworthy for low speeds and rough water.

Referring to Fig. 11, the first five illustrations of sterns show the types in use during the first decade of motor boating. Numbers 6 to 10 mark the advent of increased speed and power and an attempt to develop a stern especially for the power. From 11 to 18 are shown the introduction of the Normand V stern and the various modifications developed from it.

The next set to 22 shows the curved sterns with their various shaped transoms. Numbers 22 and 23 are the double ended type while 24, 25 and 26 show special types which are limited to a few users. 27 shows the dory transom and 28 adaptation of the surf boat idea.

There might also be added some hydroplane sterns, but these are not properly in the boat class.

Disposing of the Exhaust.

(*Concluded from page 35.*)

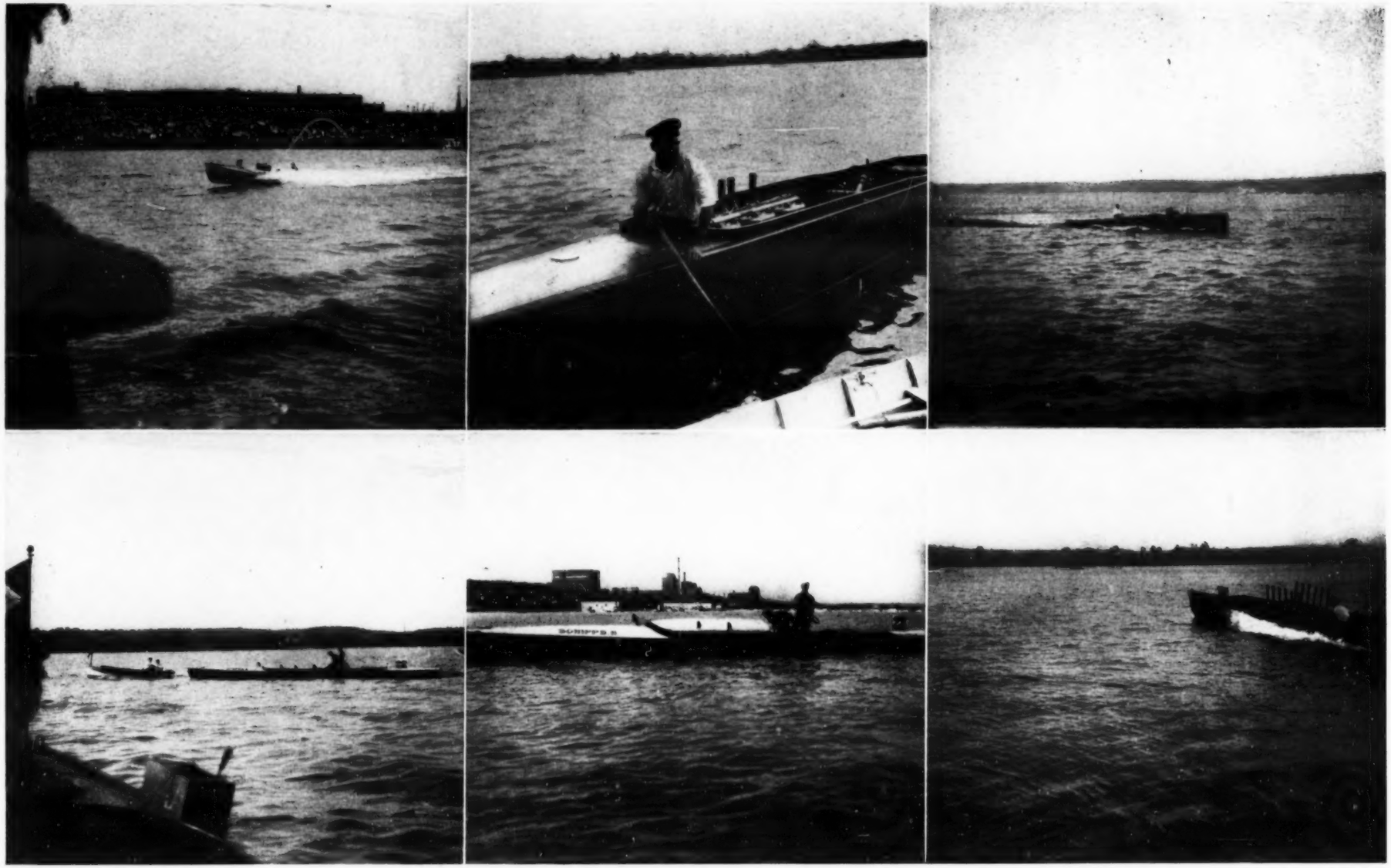
A Studied Installation.

THE writer has been motor boating in these waters for five seasons, and has made many changes in his exhaust arrangements, trying to find the most efficient one from all points of view, and has concluded that the following arrangement is the "best ever."

The engine is a 2-cylinder, 2-cycle, 6½ h.p Stanley, turning over at about 500 r.p.m. The exhaust comes out on the port side, through a 1¼ inch (pipe size) aperture. This leads into a 2½ inch elbow, turned aft. Then eight inches of 2½ inch pipe leads back to another elbow, same size, turned to starboard. This elbow opens into a muffler (or exhaust chamber) 6 inches in diameter and eighteen inches long, which leads toward the starboard side of the boat, and is inclined so that its outlet is below the waterline. The end of this chamber furthest from the engine is capped and the cap is tapped for a piece of 1½ inch pipe. This pipe is joined to the inboard end of a patented exhaust head, placed on the outside of the boat, just aft of amidships and 6 inches below the load waterline, by a piece of 2 inch steam hose, clamped at both ends to the pipes with brass clamps. This hose prevents the arrangement from carrying the vibration of the engine through to the side of the boat and obviates any possible leakage from such cause.

The elbow next to the engine is tapped on the top for a ⅜ inch pipe, and the exhaust water from the water jacket of the cylinders is led into the exhaust pipe about three inches from the wall of the cylinders, and is carried outboard through the pipes above mentioned, and out through the exhaust head into the sea. This arrangement not only does away with noise, odor and vibration from the exhaust, but I have satisfied myself by careful tests (on two different engines) that instead of decreasing the power of the motor by back pressure, it increases the revolutions—the action of the water in the cooling of the gas exhaust, and the suction of the outer water through the exhaust head, creates a noticeable suction, away from the engine in the exhaust chamber. Experiments showed, however, that the exhaust chamber, to show the above efficiency, must have a capacity of more than five times that of the total of the engine's cylinders. Again, in the arrangement above mentioned, all the exhaust water can be run through the exhaust chamber, as in this particular installation, the lowest point in the system is the outlet overboard. In case this is not possible in another boat, it would only be necessary to put a valve in the exhaust water pipe, and allow only as much water to go into the exhaust piping as would be vaporized by the heat. J. R. ROBERTS, New York.

The race around Lake Ontario.—Contestants at the breakwater.—See story beginning on page 7.



The races of the Western Power Boat Association at Peoria.

In the upper line from left to right are Mascot, the winning 26-footer; the skipper of Hoosier Boy, and Independence. Below are shown Scripps II after the accident, and at the right, Lamb IV.

At the gun in the Western Championship.

Start of the 26-footers.

Western P. B. A. Races at Peoria.

By E. Percy Noel.

THE water carnival at Peoria, Ill., where the Western Power Boat Association held its annual regatta, August 17, 18 and 19, demonstrated amply the keenness of the new interest in motor boating in the West. The regatta speaks well for the future, promising greater things for next year. The cruises from Chicago and St. Louis vociferate the beauty of the Illinois river; boatmen who never dreamed of this beauty, found the slowly running stream winding in and out among the hills and dales something to marvel at.

Never before in the history of western boating had such an array of evenly matched speed boats gathered together as at Peoria. True, an accident that might have happened in almost any water, spoiled the great race in which these powerful craft were struggling closely; but to see them start was in itself an inspiring sight. Four of these boats, which participated in the free-for-all, were credited with 30-mile-an-hour speed or better, and not even the most experienced boatman would predict a winner among these fast movers—Hoosier Boy, champion of the Ohio river, piloted by W. F. Whitlock, of Rising Sun, Ind.; Independence II, the eight-cylinder, 210 h.p. racer of E. C. Koenig, St. Louis; Scripps II, 100 h.p., six-cylinder engine of W. E. Scripps, of Detroit; and Lamb IV, the victor of the Mississippi, with her twelve-cylinders delivering 120 h.p.

So closely matched were they that when the gun boomed from the judge's boat they ploughed the 7,000 feet of the first leg of the triangular course, their bows tossing the spray on to each other and reached the first buoy boat length to boat length apart. Lamb IV had the pole at the start, with Independence II in the next position and Scripps II in the third. At the cannon, Lamb IV shot forward with a sudden burst of speed, but she held the lead for only a moment. Independence II was quick to seize the lead, cutting ahead of Scripps II, churning great swells for her opponents to ride. Up the stretch they could be seen through the clouds of oil smoke that Independence vomited from her open exhausts, so close together at times that it seemed collision was unavoidable.

Then a great geyser of water shot up at the first buoy. Those who watched through the glass said that Scripps II had rammed Independence, and the next moment the Independence was seen shooting straight in for the shore, obliquely from her course. Scripps, lying lower on the water, could not be seen from the judge's boat, and some one thought she had sunk. But no one surmised correctly.

When the police boat reached the first buoy after a run up the course to help, Scripps II was being towed to shore by a small launch and the Columbia and Meteor of St. Louis had gone to the assistance of the St. Louis speeder. Scripps was leaking badly aft, while the Independence was aground in the near-shore mud. Independence had struck a floating seine pole, partly submerged, which broke her steering gear, and had been abruptly turned from her course. Scripps II hit the same obstacle and was thrown into the air fully six feet, but came down right-side up with a leaking hull, minus her wheel and with her clutch stuck fast. The engine was shut off when the impact came. The damage to Independence was not so great.

Running with six feet of her twenty-three clear of the stream and throwing the water behind and on both sides so that the jets looked like inverted water-falls, Mascot, the latest production of Corsepius of Fort Madison, Ia., won two events preceding the free-for-all on the second day. The first race was for 32-footers, but there were no boats of that size to appear, although Wonder of Chicago took her number and was expected until the last minute. Mascot defeated Teaser, Teaser of the Mississippi, the 26-footer that had never before been beaten—and in this connection it is interesting to note that Teaser was 26 feet 6 inches when she began to practice in Peoria waters the day before the race. Somebody objected—rightly enough—and then what do you think happened. When the boatmen awoke on the first race day they found that Teaser was rather stubby around the nose—for six inches had been sawed off her bows, and the hole blocked up with a patch.

In the 32-footer race Teaser took Mascot's lead away on the last leg of the five-mile course, and the latter trailed around the judge's boat 200 yards behind. Up the back stretch Mascot seemed to throw the water a little higher, and soon it was plain that she was gaining. The first moving thing that could be seen in the distance on the home stretch was a geyser—the spectators knew that meant Mascot, and they cheered the odd little craft as she hove in sight with the water falling all over her. Teaser got farther in the rear before the finish of the fifteen miles, Mascot winning easily.

St. Louis boats took all the available places in the cabin and half-cabin events, the Allamakee, of W. S. Ferguson, seizing first place and R. H. Combs' Duro Four, second place in the full-cabin race. The only St. Louis boat entered in the half-cabin class—the Meteor of August Kron—made a walk-over of the race.

Before the races, nearly thirty boats planned to start together from Bridgeport, Ill., at the beginning of the Illinois-Michigan canal, to cruise to Peoria ways. The contingent that did get there arrived irregularly, but represented nearly every boat club in the vicinity of Chicago. It was not the boatmen's fault, for enthusiasm was great over the prospect of the cruise; it was the weather that caused the trouble.

Planning the get-away from Chicago early Saturday morning, the cruising boatmen encountered the worst summer storm that has been felt in Chicago for some time. The wind blew up a great deal of sea, then the rain came donw in torrents. Three and one-half inches of water fell that morning, causing no little trouble on land and making it unsafe for the small, open boats in the open water. The few boats that did plough on through the weather to Bridgeport were a long time getting there.

This misfortune at the start broke up the organized cruise and the boats whose owners had planned to make the run to Peoria got down as best they could. The best runners arrived in Peoria Monday night. The Illinois Valley Yacht Club, otherwise called the "Ivy" Club, met the boats up the river and escorted them down, then entertained the boatmen from the North at the beautiful clubhouse about four and one-half miles from Peoria.

The Chicagoans found trouble in the old Illinois-Michigan canal, but when the river was reached it was such easy going that no one bothered to follow the lights that mark the channel. Through this canal the commerce of the Great Lakes once moved towards the Mississippi, but now it is used chiefly by pleasure boats—not always with pleasure. It is ninety-six miles from Bridgeport to the end near Peru—Lasalle. Coming down, the boats that drew more than three feet of water dug the mud at the bottom and there were occasional halts to get out of it. Along some of the levels the cruisers saw beautiful country, but the southern end of the canal shouted ugliness like the northern.

Below Peru the boats passed through a section of the coal-mining district with a rugged line of hills in the distance. One hundred and twenty miles from Chicago they passed the mouth of the Hennepin canal. Only a pair of stone walls, partially hidden by the trees, showed where the connecting link between the upper Mississippi and the Illinois makes its beginning. The canal cost the government $22,000,000 and twenty years' work. It is not a paying institution, but is being well kept up and is a fine thing for motor cruisers wishing to pass from the Illinois into the Mississippi at Rock Island.

Among the Clubs

Mariners' Harbor Yacht Club, Staten Island, N. Y.—This club, which was organized May 13, 1908, and now has 145 members, with a fleet of forty boats, opened its new clubhouse at Mariners' Harbor, on August 7. Other clubs on Staten Island were invited to enter or witness the special races held to mark the occasion. The officers are as follows: Commodore, O. A. Traudt; vice-commodore, William C. Erwin; treasurer, William Houghwout; secretary, Frederick Lichtward; financial secretary, M. M. Gratz.

* * *

South Salem Power Boat Club, Salem, Mass.—The South Salem club was recently organized, and the following officers were elected: Commodore, Joseph T. Hopkins; captain, Charles P. Rudderham; chief engineer, Harry Banks; secretary, J. A. Ewart; treasurer, Guy W. Ricker. The first races of the club were held on August 7.

* * *

Lake Hopatcong Yacht Club, Lake Hopatcong, N. J.—The annual meeting of the club, recently held, resulted in the election of the following officers: Commodore, P. B. Bird; vice-commodore, Leonidas Dennis; rear commodore, Philip W. Oetting; secretary, Roger W. Brett; assistant secretary, C. Leverich Brett; treasurer, Gustav Reinberg; assistant treasurer, A. C. Chase; trustees, R. L. Edwards and L. A. Morey. The club has had an active season, taking part in two carnivals and motor boat parades, and conducting many races, including a thirty-mile race and a 100-mile scratch race.

Charles River Motor Boat Club, Cambridge, Mass.—This new club has the following officers: Commodore, George Howland Cox; rear commodore, H. A. Dingwell; secretary-treasurer, H. H. Coburn. The club pennant has a forward-pointing white arrow on a blue ground. The Charles River M. B. C. had charge of the annual race of the New England Engine and Boat Manufacturers' Association for the Chester I. Campbell trophy, held in the Charles River Basin on August 7.

* * *

Saginaw Boat Club, Saginaw, Mich.—At the annual meeting of the club the following officers were elected: President, F. A. Rockwith; vice-president, Fred Beckbissinger; secretary-treasurer, H. L. Griffin. These officers, together with William Zeman and Vincent Kindler, will constitute the board of trustees. The Saginaw Boat Club is planning for a big open regatta during the first week of October.

* * *

Fort Stanwix Power Boat Club, Rome, N. Y.—The Fort Stanwix club at its recent annual meeting elected the following officers: Commodore, Thomas Steele; vice-commodore, David A. Hollister; fleet captain, C. J. Schriever; secretary-treasurer, C. H. Van De Mark.

* * *

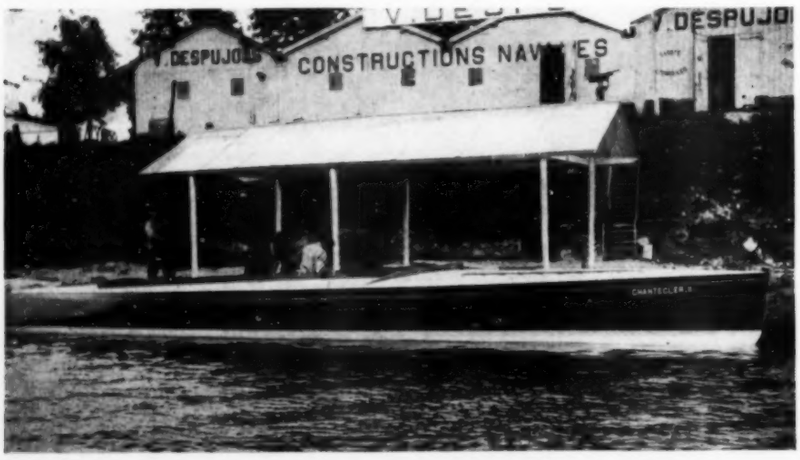
Eight Bells Motor Boat Club, New Bedford, Mass.—The Eight Bells club was organized only a short time ago, and is headed by the following officers: Commodore, Herbert M. Hammond; vice-commodore, Edgar B. Crosby; secretary, Chester M. Hammond. Finance committee—John Woodruff, Manuel Rogers, Charles Chace. House committee—Cyrus Lynch, John Alexander, Ellery Peckham. Press committee—George H. Allen, George Heroux. Committee in charge of club runs—Commodore Herbert M. Hammond, vice-commodore Edgar B. Crosby, John Woodruff.

* * *

St. John Motor Boat Club, New Orleans, La.—Motor-boating seems to be enjoying a boom at New Orleans. Last month we mentioned the organization of the New Orleans Motor Boat Club, and now the organization of the St. John Motor Boat Club on August 12 is to be chronicled. Temporary organization was effected upon that date, at a meeting attended by over a hundred motor boatmen, and the following officers were elected: President, Harry L. Moses; secretary, H. Kenner. Committee on rules and by-laws—G. P. Kerney, chairman; P. J. McMahon, Jr., M. Nugent, Gabriel Sintes. Committee on membership: J. Bart Davis, chairman, P. Massicot, C. W. Lass, E. C. Bertonierre, P. J. McMahon, Sr. The St. John Motor Boat Club intends to secure a convenient site somewhere between Spanish Fort and West End and erect a club house, with accommodation for housing motor boats, and a fully equipped repair shop. The number of motor boat owners is growing rapidly, and facilities such as this clubhouse will provide are very much needed.

* * *

Motor Boat Club of Buffalo.—The Buffalo Boat Club is the sort of organization that seems not to be disheartened by any mishap. The new clubhouse, which had just been completed, and an older building, were both completely destroyed by fire on July 17. But the club went right ahead and started a new house on Motor Island, to cost $18,000. This structure, to be an improvement in some respects over the one that was burned, it is expected will be ready for occupancy by October 15. The new building is to be two stories high, and metal lath and concrete will be used in its construction. Meanwhile the Buffalo club is going right ahead with its racing program. One important event comes off September 4—the second annual international motor boat race, 25 miles, for the championship of the Great Lakes, for the Edwin Ross Thomas trophy. This race will be held over the club course of five miles in the Niagara River, five times around, starting 3:30 P. M. All boats start scratch, no time allowance, and no boat is eligible for the race which is not capable of a speed of twenty-five miles per hour. It is expected that winners of the Gold Cup and Inter-Lake regattas will meet in this race. At least two speedy boats will enter from the Buffalo club, Courier II and La Truda. Entries for this race must be in the hands of rear commodore James Savage, 1097 Ellicott Square, Buffalo, by Thursday, September 2.



Chantecler II.—A boat that made a long-distance record in France.

This boat, built by Despujols, and powered with a Brasier motor, ran 370 kilometres from Paris down the Seine to Trouville, passing through seven locks, in 10 h. 40 m. The return trip up stream was made the next day in 10 h. 30 m.. This is an average speed of 21.5 miles per hour.

Wolff II.—Our double page this month shows Wolff II, the new greyhound of the coast. This boat was built by her owner, John E. Wolff, of Portland, Ore. In the Alaska-Yukon-Pacific Exposition motor boat races held on Lake Washington July 3-10, Wolff II covered 30 miles, three times around a ten-mile triangle, in 56m. 25⅕s. Later, in the long distance race, she went 60 miles around the same ten-mile course in 2h. 2m. 42s. Wolff II—L. O. A. 39 ft. 9 in., beam, 4 ft. 5 in., draft, 8 in. Motor—110 h. p. six-cylinder, two-cycle Smalley, cylinders, 5½ in. by 5½ in., 850 r. p. m.

Ohio River Regatta.—The regatta of the Ohio River Launch Club on the Ohio River at Cincinnati, on July 24, brought out a big fleet of starters. The system of handicapping according to previous performances was used. A boat was disqualified for running either one per cent slower or three per cent faster than her trial time. The summary of Classes C, E and F follows:

CLASS C—EIGHT AND ONE-THIRD MILES.

Boats.	Start.	Finish.	Elapsed Time.
Candidate	1.00.00	1.29.24	29.24
Br'er Fox	1.13.28	1.32.56	19.28
Hoosier Boy	1.13.41	1.33.00	19.19
Uncle Pete	1.04.40	1.34.20	30.16
Idler	1.07.35	1.36.27	31.30
Just Rite	1.04.52	1.34.20	30.16
It	1.07.32	1.39.02	31.30
Silver Fox	1.09.15	1.39.25	30.10
Ione	1.03.21	1.41.46	38.25
Mercedes	1.13.34	1.43.12	29.38

CLASS E—SIXTEEN AND TWO-THIRDS MILES.

Mercedes	3.33.44	4.30.20	56.36
Idler	3.34.00	4.32.14	57.18
Uncle Pete	3.32.28	4.34.13	59.56

Candidate, Just Rite and Silver Fox did not finish.

CLASS F—TWENTY-FIVE MILES.

*Hoosier Boy	4.48.27	5.42.05	53.58
Br'er Fox	4.45.00	5.43.33	58.33

*Hoosier Boy disqualified; Br'er Fox given the race.

Peoria Races.—The annual championship regatta of the Western Power Boat Association was held August 17 and 18, at Peoria, Ill., under the auspices of the Illinois Valley Yacht Club. Hoosier Boy, the fast craft of J. H. Whitlock, of Rising Sun, Ind., won the 1909 Western Championship, covering 20 miles, four times around the five-mile course, in 45m. 18s. The results of the two days of racing were as follows:

Motor Boat Racing.

TUESDAY, AUGUST 17.

FIRST RACE—FULL CABIN CRUISERS; FIVE MILES.

Boat and Owner.	Start.	Finish.	Elapsed Time.
Allamakee II, W. E. Ferguson	2.02.30	2.28.19	25.49
Duro IV, R. H. Combs	2.02.30	2.30.53	28.23
Florian, E. A. Adams	2.02.30	2.33.01	30.31
Swastika, F. H. Noble	2.02.30	2.36.19	33.49
Pioneer, O. H. Hanson	2.02.30	2.36.58	34.28
Manueto, B. E. Strahm	2.02.30	2.37.12	34.52
Idler II, McGinnes	2.02.30	2.38.06	35.36

SECOND RACE—HALF CABIN CRUISERS; FIVE MILES.

Boat and Owner.	Start.	Finish.	Elapsed Time.
Meteor, August Kron	2.52.28	3.16.35	24.07
Rezwat, Harry Tawser	2.52.28	3.25.37	33.09
Celia, J. Wallinborn	2.52.28	3.36.10	44.22

THIRD RACE—36-FOOT CLASS; FIFTEEN MILES.

Boat and Owner.	Start.	Finish.	Elapsed Time.
Lamb IV, F. B. King	3.48.10	4.26.27	38.17
Red Wing, J. R. Trautner	3.48.10	4.28.01	39.51
Blanche B., W. W. Beckwith	3.48.10	4.38.45	40.35
Meixner, F. Meixner & Son	3.48.10	4.39.24	41.14
Pirate, W. W. Barnes	3.48.10	.....	....
Mascot, E. Corsepius	3.48.10	.....	....

FOURTH RACE—20-FOOT CLASS; TEN MILES.

Boat and Owner.	Start.	Finish.	Elapsed Time.
M. V., R. H. Combs	4.46.22	5.36.40	50.18

WEDNESDAY, AUGUST 18.

FIRST RACE—32-FOOT CLASS; FIFTEEN MILES.

Boat and Owner.	Start.	Finish.	Elapsed Time.
Mascot, E. Corsepius	2.26.10	3.05.25	39.15
Teaser, J. A. Moritz	2.26.10	3.07.30	41.20
Blanche B., W. W. Beckwith	2.26.10	.....	....

GRAND FREE-FOR-ALL—40-FOOT OR UNDER; TWENTY MILES.

Boat and Owner.	Start.	Finish.	Elapsed Time.
Hoosier Boy, J. H. Whitlock	3.49.30	4.34.48	45.18
Lamb IV, F. B. King	3.49.30	4.37.57	48.27
Red Wing, J. R. Trautner	3.49.30	Disabled	....
Independence, E. C. Koenig	Disabled		
Scripps II, W. E. Scripps	Disabled		

THIRD RACE—26-FOOT CLASS; TEN MILES.

	Start.	Finish.	Elapsed Time.
Mascot, E. Corsepius	4.49.57	5.15.30	25.33
Teaser, J. H. Moritz	4.49.57	5.17.51	27.54
Blanche B., W. W. Beckwith	4.49.57	5.20.45	30.48

Around Long Island Race.—The Colonial Yacht Club's race around Long Island, 252 miles, started off the clubhouse, on the Hudson River at the foot of West 138th St., at 2:10 P. M., on August 7, with four entries. The race was won by Irene II, owned by S. W. Granbery, Newark, N. J. She finished 7:59:01 P. M. August 8; elapsed time, 29h. 49m. 01s. Elmo II, owned by F. D. Giles, Jr., New York, was the next to finish—elapsed time, 31h. 10m. 34s. Irene II had 3h. 10m. 3s., and Elmo II had 4h. 20m. 6s. handicap from George S. Schilling's Virginia. Yet both of these boats finished ahead of the scratch boat, which came in third. The other starter, J. B. Lindermann's Snap Shot II, was the last to finish.

Colonial Midsummer Regatta.—The fourth annual midsummer regatta of the Colonial Yacht Club was held August 7, over a course laid out up the Hudson River, four times over a four-mile triangle for the three mixed classes, and three times around a ten-mile triangle for the speed boats The results were as follows:

CLASS 1—SIXTEEN MILES.

Boat and Owner.	Start.	Finish.	Elapsed Time.
Alpha, J. Wallace	2.30	4.35.36	2.05.36
Marigen, J. Crawley	2.30	5.01.15	2.31.15
Ruth V., J. Miles	2.30	5.11.47	2.41.43
Alma, J. Pratt	2.30	5.11.49	2.41.49

CLASS 2—SIXTEEN MILES.

Revilla, C. Miner	2.35	4.34.50	1.59.50
Selma, R. Crow	2.35	4.41.07	2.06.07
Nod, E. Murphy	2.35	4.41.35	2.06.35
Mary, W. Murphy	2.35	4.42.11	2.07.11
Drednaught, C. Franklin	2.35	4.56.39	2.2139
Amoranth, F. Totten	2.35	4.56.42	2.21.42

CLASS 3—SIXTEEN MILES.

Priscilla, R. Weldon	2.40	4.38.22	1.58.22
Lydam, H. Johnson	2.40	4.46.16	2.06.16
Madeline, Prof. Rorer	2.40	4.46.35	2.06.35
Helen, N. Salomonsky	2.40	5.14.55	2.34.55

CLASS 4—SPEED BOATS—THIRTY MILES.

Kitty Sparks, T. Purdie	2.45	4.17.26	1.32.26
Pell Mell, J. J. Flaherty	2.46	4.39.27	1.54.27
Comeleven, C. Sheffler	2.46	5.01.07	2.16.07

September.

Sept. 1—Muscatine (Ia.) Launch Club Races.
Sept. 1—Willamette Motor Boat Club, Portland, Ore.
Sept. 1—Waucoma Yacht Club, New Haven, Conn. Annual Regatta.
Sept. 4—Detroit Motor Boat Club. Novelty Race.
Sept. 4—Savin Hill Yacht Club, Dorchester, Mass. Races.
Sept. 4—New Haven Yacht Club. Fall Regatta.
Sept. 4—Gloucester Yacht Club. Club Races.
Sept. 4—Motor Boat Club of Buffalo. Great Lakes Championship Scratch Races.
Sept. 4—Larchmont Yacht Club. Motor Boat Races.
Sept. 4—Jackson Park Yacht Club (Chicago). Cruising Race to Michigan City.
Sept. 4—Pacific Motor Boat Club. Cruise to Vallejo.
Sept. 4—South Bay Yacht Club, San Jose, Cal. Cruise to San Francisco.
Sept. 4-5-6—Royal Vancouver (B. C.) Yacht Club. Cruise.
Sept. 4-9—Vallejo (Cal.) Yacht Club. Races.
Sept. 5—Pistakee (Ill.) Yacht Club. Races.
Sept. 6—Jubilee Yacht Club, Beverly, Mass. Fifth Race for Vittum Cup.
Sept. 6—Holly Beach (N. J.) Yacht Club. Open Race. All Classes.
Sept. 6—Beverly Yacht Club. Races.
Sept 6—Hempstead Bay (N. Y.) Yacht Club. Open Regatta.
Sept. 6—Fall River Yacht Club. Races.
Sept. 6—Quincy Yacht Club. Races.
Sept. 6—Ventnor Motor Boat Club, Atlantic City, N. J. Regatta.
Sept. 6—Gloucester Yacht Club. Club Races.
Sept. 6—Marietta Power Boat Assn. Speed Races.
Sept. 6—Tappan Zee Yacht Club, Nyack, N. Y. Hudson River Y. R. A. Motor Boat Races.
Sept. 6—Lake Massabesic Motor Boat Club, Manchester, N. H. Races.
Sept. 6—Haverhill (Mass.) Yacht Club. Regatta.
Sept. 6—Muscatine (Ia.) Launch Club. Races.
Sept. 6—Savannah (Ga.) Motor Boat Club. Southern Championship Regatta.
Sept. 6—Independent Yacht and Boat Club, Northport, L. I. Handicap Races.
Sept. 6—Independent Motor Boat Club, New Bedford, Mass. Race.

Long Distance Motor Boat Races, 1909

New York to Bermuda Race, 748 statute miles—June 5. Motor Boat Club of America. Won by Heather, Richmond Levering, Cincinnati, Ohio. Time, 80h. 56m. 18s.
Bermuda to New York Race—June 14. Crescent Athletic Club. Won by Ilys, J. G. N. Whitaker, Philadelphia, Pa. Time, 79h. 32m.
Block Island Race, Huckleberry Island to Block Island, 115 miles—June 19. New York Athletic Club. Won by Martha, Paul Kossek, New York.
Pacific International Race, Vancouver to Seattle, 230 miles—June 29. Pacific International P. B. A. Won by Soya, Capt. Edgar Ames, Seattle, Wash. Time, 21h. 30m.
New York to Albany and return, 270 miles—July 3. New York Motor Boat Club. Won by Martha, Paul Kossek, New York.
"Capital to Coast" Race, Albany to New York, 135.7 miles—July 5. Albany Yacht Club. Won by Irene II, S. W. Granbery, Newark, N. J. Time, 14h. 25m.
Yachtsmen's Ocean Race, off Beach Haven, N. J., 87.5 miles—July 10. Yachtsmen's Club of Philadelphia. Won by Lady Maud, Dr. C. S. Street.
Marblehead Race, Gravesend Bay to Marblehead, 285 miles—July 17. Crescent Athletic Club. Won by Elmo II, F. D. Giles, Jr., New York.
Around Long Island, 252 miles—August 7. Colonial Yacht Club. Won by Irene II, S. W. Granbery, Newark, N. J. Time, 29h. 49m. 1s.
Lake Ontario Race, 290 miles—August 12. Rochester Yacht Club. Won by Satanita, Commodore Thomas B. Pritchard, Rochester, N. Y. Time, 27h. 22m. 28s.
Toledo Race, 164 miles—August 21. Toledo Yacht Club.
Detroit Long Distance—August 21. Detroit Motor Boat Club. Open Long Distance Race.

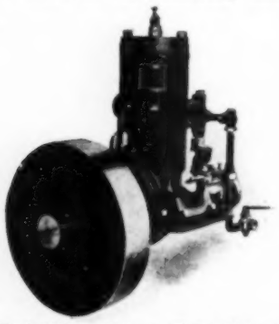
Sept. 9—Lowell (Mass.) Automobile Club. Motor Boat Races.
Sept. 11—Holly Beach (N. J.) Yacht Club. Final Races.
Sept. 11—Detroit Motor Boat Club. Club Race.
Sept. 12—Pavonia Yacht Club, Jersey City, N. J.
Sept. 11—Jackson Park Yacht Club (Chicago) Club Race.
Sept. 11—Waterway League of Greater New York and Long Island Motor Boat Races. Gravesend Bay.
Sept. 15-18—National Motor Boat Carnival. (New York.) New York Motor Boat Club and Motor Boat Club of America.
Sept. 18—Detroit Motor Boat Club. Cruise to Walaceburg.
Sept. 18—Duxbury Yacht Club. Races.
Sept. 18—Miamogue Yacht Club, Bridgeport, Conn. Races.
Sept. 18—Potomac River Regatta and Night Carnival. Motor Boat Races. Washington, D. C.
Sept. 19—Cleveland Power Boat Club. Club Races.
Sept. 19—South Bay Yacht Club, San Jose, Cal. Races.
Sept. 19—Pacific Motor Boat Club, Belvedere, Cal. Cruise to San Rafael.
Sept. 19—Erie Basin Yacht Club, Brooklyn, N. Y. Motor Boat Race.
Sept. 25—Detroit Motor Boat Club. Club Race.
Sept. 25 to Oct. 2—Hudson-Fulton Celebration Races at New York.
Sept. 25—Jackson Park Yacht Club (Chicago) Cruise down Drainage Canal.
Sept. 25—Hudson-Fulton Naval Parade. Motor Boat Division. Entries to be made with J. Adolph Mollenhauer, 84 Broadway, Brooklyn, N. Y.

October.

Oct. 3—Pacific Motor Boat Club. Cruise to Oakland.
Oct. 31—Pacific Motor Boat Club, Belvedere, Cal. Squadron Cruise.
Oct. 3-9—Hudson-Fulton Celebration Races at Newburgh and Albany.
Oct. 10—Cleveland Power Boat Club. Club Races.
Oct. 10—South Bay Yacht Club, San Jose, Cal. Races.

Motors for Motor Boats.

Red Wing Heavy Duty.—Red Wing Boat Mfg. Company, Red Wing. Minn. Red Wing motors are made in both two-cycle and four-cycle types and in either heavy duty or speed models. The Red Wing Standard heavy duty model, illustrated on this page, is of the two-cycle two-port type, and is made in the following sizes and



Red Wing Heavy Duty Motor.

prices: Single cylinder, 2 h.p., 150 lbs., $85; 3½ h.p., 190 lbs., $135; two cylinders, 5 h.p., 240 lbs., $200; 7 h.p., 340 lbs., $240; three cylinders, 11 h.p., 490 lbs., $350. These prices include complete ignition and propeller equipment. Either jump spark or make and break ignition is supplied. All models over 2 h.p. are provided with a special automatic carbureter. The timer is provided with an automatic reverse governor.

* * *

Trebert "Right and Left" Motors.—H. L. F. Trebert, Rochester, N. Y. We illustrate a pair of four-cylinder Trebert motors made up "right and left" for use in a twin-screw boat. It will be remembered that the camshafts in these motors are placed below the crankshafts and the valves are operated by rocker arms acting against the lower ends of the valve tappets. The rocker arms and the manifolds may be reversed so that the motor will run in an opposite direction. In the pair of motors illustrated, it will be seen, the exhaust manifolds come on the inner sides, the carbureter, inlet manifolds and timers for the battery ignition come on the outer sides. It will also be noticed that magneto ignition is fitted and that the magnetos are placed in protected positions.

* * *

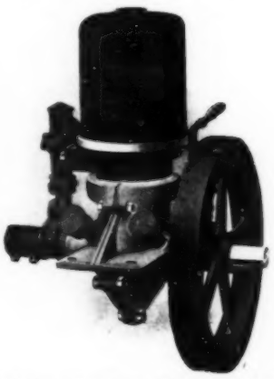
"Universal."—West Mystic Mfg. Company, West Mystic, Conn. "Universal" motors are of the two-cycle type and are made in the following sizes and weights. Single cylinder, 1½ h.p., 65 lbs.; 3½ h.p., 160 lbs.; 5 h.p., 220 lbs.; 7½ h.p., 375 lbs.; 10 h.p., 475 lbs.; 2 cylinders, 7 h.p., 270 lbs., 10 h.p., 390 lbs.; 15 h.p., 590 lbs.; 20 h.p., 700 lbs. Ignition is by jump spark on the smaller models, but either jump spark or make and break can be supplied in the larger sizes The make and break device is of special design, the plug carrying the electrodes being located on the top of the cylinder, while the cam operating the movable electrode is on the vertical timer shaft in front of the cylinder and enclosed in the regular timer case.

* * *

Holmes Special 120 H. P.—Holmes Motor Company, West Mystic, Conn. This is a special six-cylinder motor now being built for Mr. R. C. Seymour of the Larchmont Yacht Club, for his 40-foot launch Charmion. The cylinders are 6¼ inches bore by 8½ inches stroke, developing 120 h.p at 800 to 1,000 r.p.m. and the weight is 1,500 lbs. An ingenious feature of the arrangement is the possibility of changing the engine to a reversible motor by simply substituting another cam bar containing a new and different cam shaft. Or, in case a self starting engine is required, whether reversible or not, an air timer is provided which can be attached without tearing down or upsetting the the rest of the engine.

* * *

Watkins Special.—Watkins Motor Company, Cincinnati, Ohio. The Watkins Special is a 3 h.p. motor designed for use in canoes, skiffs or tenders and weighs only 30 lbs. The base is of aluminum and is divided by a vertical transverse joint into two similar halves. When put together the upper part of the base has a groove which clamps over a flange upon the lower part of the cylinder. The water jacket is of copper and is shrunk over a flange on the cylinder and held in place by a ring. The crank shaft is of drop forged steel, 1 inch in diameter. The main crank bearings are 2¼ inches long and are made of phosphor-bronze as also is the connecting rod. The water circulating pump is of the plunger



Watkins "Special" Single Cylinder.

type, operated by an eccentric on the crank shaft and is made of brass. The price is $45 for the motor alone, and $65 complete with ignition and propeller outfits.

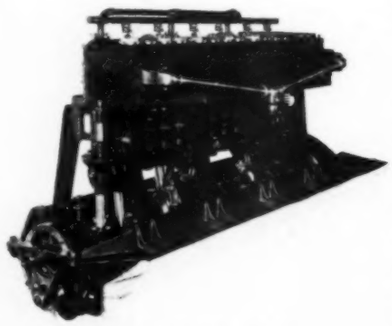
* * *

Westman Auto-Marine.—Enterprise Machine Company, Minneapolis, Minn. Westman engines are all of the 4-cycle type and the auto-marine type is made in one, two, four and six-cylinder models ranging from 4 to 60 h.p. The cylinders are of the solid head individual type and the pistons are fitted with four rings. The base and framework is of cast steel in one piece. The valves are mechanically operated and are located in a valve chamber at the top and rear of the cylinder. The base and frame is of cast steel in one piece and all the working parts are easily accessible. Ignition is by either jump spark or make and break, at the option of the purchaser. With the make and break system the Westman low tension vibrating plug is used.

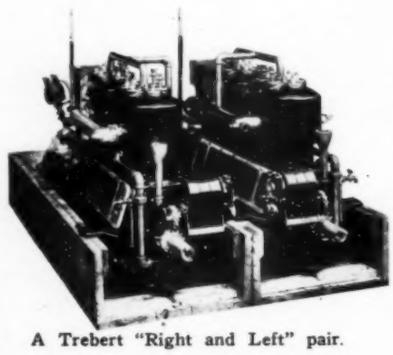
* * *

Campbell.—Campbell Motor Company, Wayzata, Minn.—Campbell motors are of the 4-cycle type and are all built with an open steel base and independent unit construction throughout. In use the base is closed with nickel-aluminum side plates and a cover of the same material is fitted over the reverse clutch, which is mounted upon the base of the motor. The sizes and weights are as follows: Single cylinder, 5 h.p., 375 lbs.; double cylinder, 10 h.p., 450 lbs., and 14 h.p., 675 lbs.; 3 cylinders, 15 h.p., 580 lbs., and 21 h.p., 950 lbs.; 4 cylinders, 20 h.p., 925 lbs., and 28 h.p., 1,225 lbs.; 6 cylinders, 48 h.p., 1,750 lbs., and 42 h.p., 1,650 lbs., and 60 h.p., 2,275 lbs. Either jump spark or make and break ignition is fitted as may be desired by the purchaser. See cut on page 53.

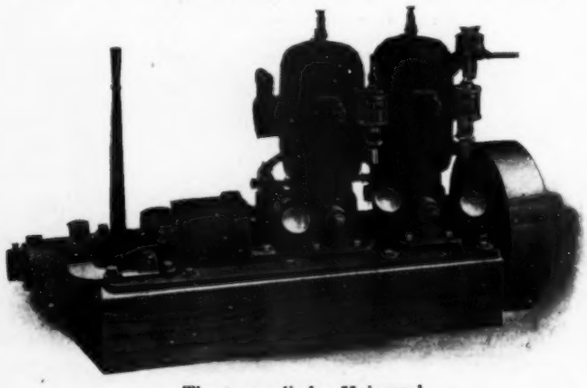
(*Continued on page 53.*)



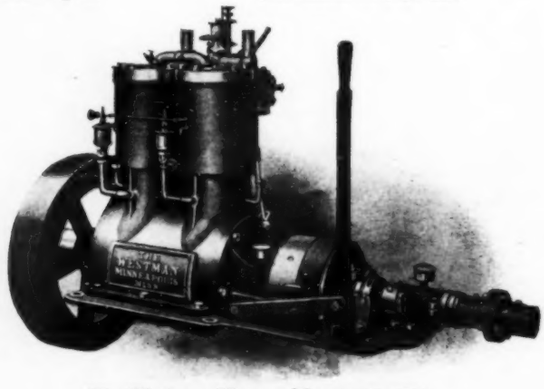
Holmes Special 120 h. p.



A Trebert "Right and Left" pair.



The two-cylinder Universal.



The Westman Motor with reverse gear.

New Things for Motor Boatmen.

New Attachments and Accessories That Are Offered to the Man with a Boat. The Month's Production of Devices Designed as Aids to Motor Boating.

[Under this heading will appear each month descriptions and, whenever possible, illustrations of the various devices designed to add to the pleasure and comfort of motor boating which have been brought out since the previous issue. It should be kept in mind that the department in any one issue is, as it were, only one month's instalment of the many useful things on the market, and that it will be well to consult the previous issues of MOTOR BOATING which will form, together, a very complete illustrated directory of the things the motorboatman needs.—In writing the makers of the articles shown, if our readers will mention MOTOR BOATING they will receive special attention.]

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Fig. 1.—Ejector Muffler

Ejector Muffler (Fig. 1).—Motor & Mfg. Works Company, Geneva, N. Y. This muffler comprises three expansion chambers which are formed by two conical diaphragms, perforated at the top and bottom and arranged in two sets. The axial tube leading through the device is of varying diameter and a portion of the gas entering the muffler passes directly into the central chamber and through the second set of cones before the gas which entered the first chamber has passed through the first set of cones. Another portion of the gas is conducted straight through the muffler and its discharge causes a partial vacuum in the third chamber, causing a suction which is claimed to prevent back pressure and to allow the gas to escape without noise. The circulating water may also be passed through the muffler. The price is from $7.60 up, according to size.

* * *

Fig. 2.—Reid Underwater Exhaust.

Reid "Rational" Underwater Exhaust (Fig. 2).—Motor & Mfg. Works Co., Geneva, N. Y. The principal feature of this device is the use of three outlets instead of one only as is usually the case. The object of the two smaller outlets is to increase the size of the hole made in the water by the projecting part of the head and to allow the gas to escape near the surface of the water when the motor is being started. The projecting part is designed to offer as little resistance as possible in passing through the water. It is made of cast brass and is sufficiently strong to withstand being injured by striking against a dock or mooring. A packing is placed between the fitting and the side of the boat in order to avoid leakage. The price ranges from $2.50 up in plated iron and $3.75 up in brass.

* * *

Fig. 3.—"Clear View" Searchlight.

"Clear View" Acetylene Searchlight (Fig. 3).—American Acetylene Stove Co., Minneapolis, Miss. The feature of this searchlight is the combination of the generator with the lamp, the carbide holder, water reservoir, gas dryer and water controlling valve all being contained within the body of the lamp. The lamp is suspended in a yoke by means of which the light is controlled in a vertical direction, and it may be fixed at any point by a hand screw on one side. The yoke turns upon its base to allow horizontal direction and may be held in any position by a set screw. A pilot house attachment may be fitted by which the lamp may be placed on the top of the cabin and controlled by levers on the inside. The price of the 1,800 candle power lamp is from $30 to $52. A 1,500 candle power model is priced from $28 to $45.

* * *

Fig. 4.—"E. M. S." Rudder Indicator.

"E. M. S." Rudder Indicator (Fig. 4).—Strelinger Marine Engine Co., 46 Congress St., E., Detroit, Mich. This is a "tell-tale" for the rudder of a boat and enables the helmsman to know the exact position of the rudder either by day or night. In operation the indicator arrow swings with the rudder and its position may be readily noted by daylight. At night the scale remains dark when the rudder is amidship. When the rudder is to port, the translucent shield of the indicator is illuminated by a red light, while a green light is shown when the rudder is to starboard. The scale also shows the angle of deflection. The price is from $10 to $50, according to size and finish.

Kenyon Life Preserver Pillow—(Fig. 5).—The R. L. Kenyon Company, La Crosse, Wis. This pillow contains no cork but contains a non-absorbent filling which makes it as soft as if filled with down. It is made in the popular mission shape and is covered with either leather or imitation leather in tan, green or red. The size is 16 inches square and the price is $3.50 in leather covering and $1.50 in artificial leather. The pillow is soft and comfortable, makes an excellent wicker chair cushion or a perfect camping pillow and will support the heaviest person in the water for an indefinite period of time.

* * *

Fig. 5.—Kenyon Life Preserver Pillow.

Jacobson-Brandow Marine Coil (Fig. 6).—Pettingell-Andrews Company, Atlantic Ave. and Purchase St., Boston, Mass. The coil shown is known as Type F and is provided with a metallic cylindrical case which may be secured directly to the engine cylinder by means of a bracket. The coil casing is of brass and is 3 inches in diameter. It has a tight fitting brass cap with bayonet joints to make it water proof and yet to be easily detachable when it is desired to inspect or adjust the vibrator. The windings of the coil are the same as are used in the regular Jacobson-Brandow product for motor cars. The secondary cable connection is of the plug type.

* * *

Fig. 6.—J. B. Marine Coil.

Cavito Underwater Exhaust (Fig. 7).—Cavito Underwater Exhaust Co., Grand Rapids, Mich. At the top, this device is threaded for pipe connection and from this point works into a rectangular section at the outlet of which the area is greater than that of the pipe. The front wall of the outlet forms a deflecting plate which throws the water downward and is therefore claimed to double the suction produced as the boat moves along. The addition of guard flanges which prevent the device from being torn off by underwater obstructions makes it unusually strong and well suited to all classes of service. It is made in gray iron or solid bronze and sells for from $2.25 to $15.

* * *

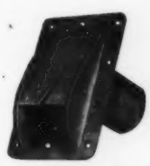


Fig. 7.—Cavito Underwater Exhaust.

Copper Fuel Tanks.—J. H. Curtiss Company, 2 South St., New York City. Many advantages over the ordinary galvanized steel models are claimed for the heavy copper cylindrical fuel tanks made by this firm. The cylinders are brazed and have round, or "bumped" heads, as they are called. They are tested to 150 lbs. pressure before being delivered and will stand heavy usage. The clean, smooth copper will not corrode or scale, and there is no solder rattling around in them. They stay clean and will not rust through in a few years but on the contrary will outlast the boat, so that their increased cost is an investment which will pay for itself in the end.

* * *

Boston Spiral Lamp Guard (Fig. 8).—S. H. Couch Company, 156 Purchase St., Boston, Mass. This guard may be applied to any incandescent lamp bulb and is an effective protection from breakage where the lamp is hung in an exposed place, or by its use an ordinary lamp may be readily converted into an inspection lamp for use about the motor or in other inaccessible places. It consists simply of a coil wire spring in the shape of a spiral with an eye at the large end which fits over the tip of the lamp as shown in the illustration. The lamp is inserted between two of the largest coils.

Fig. 8.—Boston Spiral Lamp Guard.

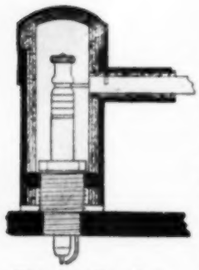


Fig. 9.—Burnham Hooded Spark Plug.

Burnham Hooded Spark Plug (Fig. 9).—Brunham Spark Plug Co., E. Edgecomb, Maine. The principal advantage claimed for this plug it that the protector makes a tight joint on the cylinder head and so prevents the admission of any moisture. The hood is made of brass and is provided with a detachable cap at the top to allow the connection of the terminal wire to the binding post of the plug. It is provided with a cork lining which is coated with shellac. The plug is screwed in the cylinder head in the usual manner and the hood is then screwed down over the plug, a tight joint with the cylinder head being made by means of a leather gasket. Either mica or porcelain plugs are furnished and the price complete is $3. Additional plugs may be had for $1.25 each.

* * *

Fig. 10.—Samson Tiller Rope.

Samson Tiller Rope (Fig. 10.)—Samson Cordage Works, Boston, Mass. Samson Tiller Rope is made especially for use in launches and other small boats and consists of a mahogany colored cord with a wire cable center. It is made of extra quality stock with smooth braid, thus avoiding the abrasion which destroys rough cord so quickly. It does not stretch and is durable and flexible. It is regularly made in four sizes of ¼, 9/32, 5/16 and ⅜ of an inch in diameter, with either a galvanized or a bronze wire center and the price is from 3 to 7½ cents per foot. Other sizes and colors are made to order and it is also made to order in Italian hemp or linen. It is regularly supplied in coils of about 1,200 feet.

* * *

Fig. 11.—Hydrex Exhaust Silencer.

Hydrex Exhaust Silencer (Fig. 11).—Hydrex Silent Exhaust Works, Dansville, N. Y. This silencer is made of cast iron in the shape of an inverted cone, having an inlet connection near the upper end and an outlet connection on the opposite side of the lower end. This outlet is made upon the principle of the Venturi tube, being compressed in the middle and enlarged toward both ends. The top of the silencer is tapped to receive a connection with the circulating water and also contains a relief cock or pilot valve, to be opened in starting the motor when it is not in operation. The hot gases entering the silencer impinge against a deflecting plate and the conical wall of the silencer and are given a rotary motion which, in connection with the admixture of the steam from the circulating water, is claimed to cool and silence them. The prices are from $8 to $31.50 each, according to size.

* * *

Fig. 12.—Hydrex Subsurface Exhaust Outlet.

Hydrex Sub-Surface Exhaust Outlet (Fig. 12).—Hydrex Silent Exhaust Works, Dansville, N. Y. This consists of a single bronze casting comprising a flat brass plate for attachment to the hull, which is traversed by the outlet pipe at an angle of about 45 degrees. The inboard part of the pipe is threaded at the top to take the connection from the motor, and the outboard is increased in sectional area and is conical in shape, having its opening perpendicular to the face of the plate. The front portion of the outlet acts as a deflector when the boat is moving forward. Prices are from $3.50 to $9.50 each, according to size.

* * *

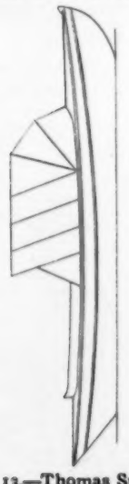


Fig. 13.—Thomas Spray Hood.

Thomas Spray Hood (Fig. 13).—W. E. Thomas & Company, 29 Haverhill St., Boston, Mass. This hood is made with brass bows of hard brass tubing designed permanently to keep their shapes. All fittings are of brass and the covering is made of 10 oz. government standard khaki duck, which is claimed to be water proof, mildew proof and sun proof. A large opening with flapped cover is fitted in front for a celluloid window. When the hood is housed it is said to lie snugly around the forward wash rail. The hood is made in 6 foot to 9 foot sizes, selling for from $25 to $35. The company also makes double hoods, cockpit covers, aprons, etc.

* * *

"Racine" Attachable Match Flare (Fig. 14).—John Dean Mfg. Company, Racine, Wis. Everybody is familiar with the extreme difficulty of lighting a match outdoors, particularly if there is any wind. This trouble may be entirely overcome by the use of this new article, which consists of a small tubular flare made of easily ignited but slow burning material. This is slipped over an ordinary match, which is lighted in the usual manner and which converts the flare into an incandescent mass, resembling a glowing coal. A breeze which would put out an ordinary match causes the flare to glow brighter. The flare is put up in cartons containing twenty-four each and the price is $6.50 per thousand cartons, including the printing of advertising on both flare and cartons.

* * *

Balanced Submerged Exhaust Outlet (Fig. 15).—Glens Falls Mfg. Co., Glens Falls, N. Y. As is shown in the illustration, the principal feature of this device is a balanced deflecting plate which is pivoted in the center of the exhaust outlet and is held in position by the pressure of the water when the boat is moving either forward or backward. In either case the deflector is held so that the exhaust issues in the direction opposite to the movement of the boat. The exhaust connection to the outlet is intended to have a small plug valve near the engine, which is to be opened when the engine is not running. The outlet is made entirely of bronze and the price ranges from $4.50 to $22, according to size.

* * *

Baldwin Tumbler Carrier (Fig. 16).—Baldwin Tumbler Carrier, Inc., 143 Federal St., Boston, Mass. This device furnishes a safe and clean manner of carrying a number of drinking glasses. Each tumbler is held in a nickel spring holder which acts as a cushion and protects the tumblers when nested, protects the glass from cracking and also the fingers of the user from heat when the tumbler is filled with hot liquid or from the moisture which gathers on the outside of the glass when it is filled with cold liquid. The tumblers are nested within these holders and held between a top and bottom spring, so that they cannot be broken. The prices, either of brass and including from two to six tumblers and holders is from $2.50 to $3.50.

* * *

Kenerson Transmission Dynamometer.—Builders Iron Foundry, Providence, R. I. This dynamometer was invented and patented by Prof. W. H. Kenerson, and was illustrated by him in a paper read before the American Society of Mechanical Engineers at Washington, in last May. It is a device which indicates by means of a pressure gauge the amount of power transmitted through it, the dial on the gauge being graduated to show the horsepower per hundred revolutions per minute of the shaft to which the dynamometer is attached. It is sensitive and correct to a degree approximating that of the ordinary gauge for indicating pressure, and the construction is such that it cannot easily be deranged.

* * *

Monitor Knocked Down Frames (Fig. 17).—Motor Boat & Engine Co., 185 Railroad Ave., Newark, N. J. The monitor line of knocked down frames for 1910 include about 125 sizes of frame from 12 to 50 feet in length and of various widths. The models include speed, semi-speed and family boats in the open type and also cabin cruisers, motor tenders and auxiliaries, the latter either open or with cabin, and wide transom, torpedo, round or fan tail models. Bows may be had in either the regular or flaring shapes. All frames are set up and the parts exactly fitted before shipment so that to re-erect them it is only necessary to drive the permanent fastenings into the drilled holes.

* * *

Desmond Full Size Designs (Fig. 18).—The Desmond Company, Tarrytown, N. Y. These designs differ from those ordinarily supplied by naval architects in that they include in addition to the architect's scale drawings, additional full size or large scale drawings showing details of construction, full size patterns of the moulds and other necessary parts, bills of material giving amounts and dimensions of all materials required to completely build and equip the boat and complete instructions covering the entire building and equipment of the boat. These designs include all types of motor boats, open speed or pleasure boats, from 16 to 40 feet in length, cabin cruisers from 25 to 50, auxiliaries and even motor canoes. Prices range from $7 to $25.

Fig. 14.—"Racine" Attachable Match Flare.

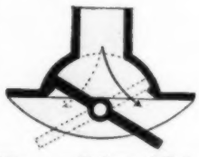


Fig. 15.—Balanced Submerged Exhaust Outlet.

Fig. 16.—Baldwin Tumbler Carrier.

Fig. 17.—Monitor Knocked Down Frames.

Fig. 18.—Desmond 25-Foot Speed Boat.

Yard and Shop

General Trade News

Campbell Brothers, Seattle, Wash.—The boat and engine shop of Campbell Brothers, Seattle representatives of the Union engine, was recently damaged by fire to the extent of $8,000, partially covered by insurance. The pattern shop suffered the greatest damage.

Rippley Steel Boat Company, Grafton, Ill.—This company is building for the United States Government three all steel motor boats to be used on the Mississippi River in connection with snag boats, for laying anchors, running lines, etc. These boats are to be built of No. 16 gauge galvanized steel plates, channel steel ribs and keel, with torpedo tunnelled sterns. Two of the launches will be 28 feet long by 5½ feet beam with 15 h.p. Ferro engines and the other 20 feet long by 5 feet beam, with a 10½ h.p. Ferro.

Thomas P. Leaman, Portland, Me., has been awarded a $2,662 contract by the lighthouse inspector of that district for five motor dories and equipment for another motor boat of the Hampton type.

Ferro Machine and Foundry Company, Cleveland, Ohio.—The Ferro Company recently received an order from the United States Navy Department 1or six 4 h.p. Ferro engines, with Ferro reverse gears. These motors are to be installed in 20 ft. dories which will be used at the United States Naval Station at Mare Island, Cal. The launch Eager, used by the commanding officer at the United States Navy Torpedo Station, Newport, R. I., has just been equipped with a Ferro reverse gear. The motor is an 11 h.p. Ferro.

The Charles M. Partelow Boat and Canoe Company, Boston, Mass., have removed their plant from East Boston to East Cambridge, on the Charles River, where better manufacturing and boating facilities are afforded. Among the boats recently launched by this company is the fast Harriet, built for Harry E. Marston of Cambridge. This boat has a new style of stern designed for speed as well as safety, which the company calls the "Merry Widow" stern. Another recent product of this yard is the 28-footer built for Edward S. Burns. She is powered with a Fulton motor, and is expected to show good speed.

New York Yacht, Launch and Engine Company, Morris Heights, New York.—An able cruiser recently built by this company is the Katherine B., owned by Col. John S. McEwan of the Albany Yacht Club. She is 34 feet 4 inches L. O. A., with a hunting cabin, and is driven by a 12 h.p 20th Century motor, with make and break ignition. When taken up the Hudson to her berth at Albany she ran steadily at nine miles an hour.

Heinze Electric Company, Lowell, Mass, coil and magneto manufacturers, have lately completed an extensive addition to their No. 1 plant.

The new Belle Isle Motor Company, Detroit, Mich., have moved into their new factory on Motor Boat Club Lane, foot of Parkview Ave., where they expect to turn out a large number of Belle Isle motors for 1910. The company also conducts a supply store and motor boat repair shop. Three berths are provided for launches undergoing repairs, and a chain hoist is installed so that the boat's stern may be easily lifted or the engine lifted out of the boat. The company's new plant is very convenient of access for Detroit Motor Boat Club members.

Trade Literature Received.

E. M. White & Company, Old Town, Me.—Catalog of White Canvas Covered Canoes, motor boats, spray hoods, paddles and other equipment.

The Auto-Pneumatic Life Preserver Co, 309 Broadway, City.—Circular of the Auto-Pneumatic Life Preserver, self-inflating and self-acting.

John H. Thompson & Co., 650 Woodward Ave., Detroit, Mich.—Circular of the Dixie Air Compressor and complete whistle outfits.

Ellsworth Foundry & Machine Works, Ellsworth, Me.—Circular of the Ellsworth double cylinder air compressor.

Frank W. Morse, 516 Atlantic Ave., Boston, Mass.—Circular of the Morse Portable Hand Lamps, inspection lamps, searchlights, ignition cable terminals, etc.

Connecticut Telephone & Electric Co., Inc., Meriden, Conn.—"Connecticut Ignition." Booklet descriptive of the Connecticut spark coils, switches, current indicators, timers, distributors, etc.

Hoyt Electrical Instrument Works, Penacook, N. H.—Booklets descriptive of the Hoyt Triune Voltammeter and Hoyt voltmeters and ammeters for direct current.

Columbian Brass Foundry, Freeport, N. Y.—Circular of the Columbian Speed Propellers.

Gas Engine & Power Co. and Charles S. Seabury & Company, Consolidated, Morris Heights, New York City.—"Yachts, Launches and Thier Propelling Power." Booklet illustrating some of the most notable yachts, launches and other boats constructed by this company, and especially describing the Speedway gasoline motors and the Seabury marine steam engines and water-tube boilers.

Detroit River Boat & Oar Company, Wyandotte, Mich.—Circular of the Detroit Special Runabouts, 18 ft. and 20 ft., 3 and 6 H.P.

Hankscraft Company, De Pere, Wis.—Twenty page illustrated catalog of Hankscraft, specifications of standard type, and price-list of accessories.

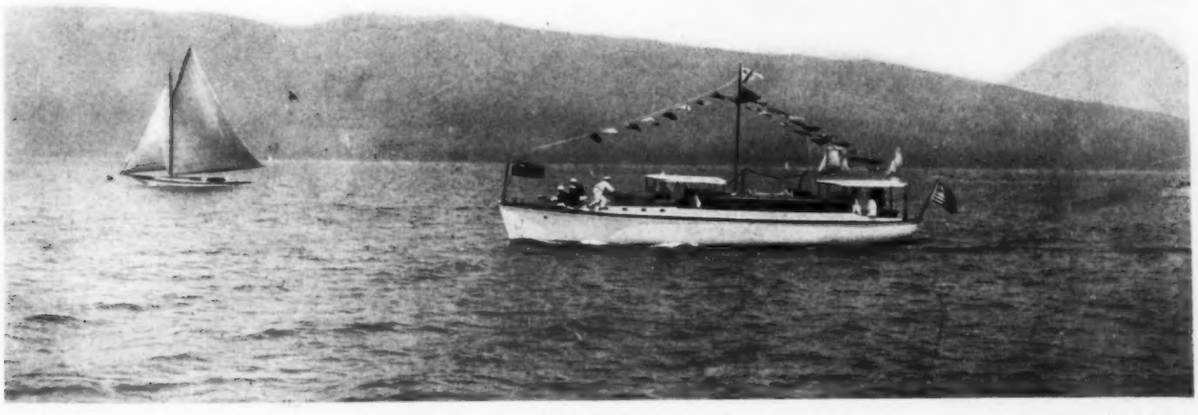
H. C. Doman Company, Oshkosh, Wis.—Circular of Doman 30 H.P. heavy duty marine engines.

Rippley Steel Boat Company, Grafton, Ill.—Thirty-two page catalog descriptive of Rippley steel motor boats and fittings.

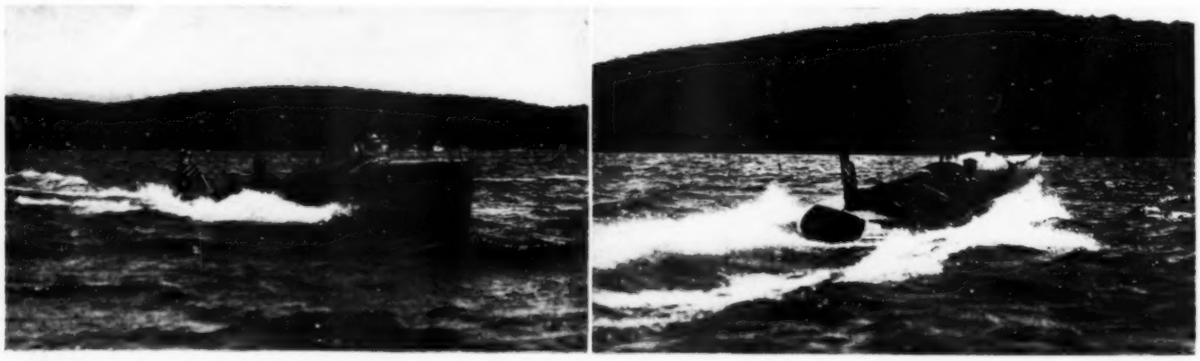
The K-W Ignition Company, Whitney Building, Cleveland, Ohio.—Forty-four page catalog and price-list of K-W Magnetos, supplying sufficient current for both ignition and lighting lamps or searchlights. Also K-W coils, spark plugs, searchlights and lamp fixtures.

Truscott Boat Manufacturing Company, St. Joseph, Mich.—The Launch, a quarterly publication, for June, 1909.

Bath Marine Construction Company, Bath, Me.—Booklet illustrating various designs of open and cruising cabin motor boats.



Soya, winner of the recent Vancouver to Seattle race.



Barbara II on Lake Hopatcong. She is 29 ft. 3 in. long. Her hull was made by the Detroit Boat Co. and she has a 40 h. p. American-British motor.

The Month's Motor Boating Patents.

ISSUED JULY 13, 1909.

927,520. **Carbureter.** Norman T. Harrington, Lansing, Mich. Filed Jan. 27, 1908.

927,640. **Construction of Boats.** William H. Cole, Philadelphia, Pa. Filed Mar. 24, 1908.

927,642. **Cranking-Handle.** George J. Dallison, Ottawa, Ontario, Canada. Filed Nov. 25, 1908.

927,681. **Starting Device for Internal-Combustion Engines.** Weldon H. Rouler and Samuel C. Igou, St. Louis, Mo. Filed Oct. 10, 1908.

927,702. **Cooling Device for Engine-Cylinders.** Schuyler W. Zent, Miamisburg, Ohio. Filed Feb. 15, 1909.

927,704. **Electric Igniter Device.** Louis Baskin, New York, N. Y. Filed May 7, 1907.

927,996. **System for Propelling Vessels.** Thomas Motton, Toronto, Ontario, Canada. Filed May 25, 1908.

928,035. **Marine Propulsion.** Michael J. Flynn, New York, and John C. Patnode, Au Sable Forks, N. Y.; said Flynn assignor to said Patnode. Filed Jan. 22, 1909.

928,042. **Carbureter.** John S. Goldberg, Chicago, Ill., assignor to Goldberg Motor Car Devices Manufacturing Company, Chicago, Ill., a Corporation of Illinois. Filed Jan. 7, 1908.

928,121. **Carbureter.** John S. Goldberg, Chicago, Ill., assignor to Stromberg Motor Devices Company, Chicago, Ill. Filed Aug. 17, 1908.

928,204. **Induction Coil for Ignition Systems.** Burton L. Lawton, Meriden, Conn., assignor to The Unit Coil Company, a Corporation of New Jersey. Original application filed June 19, 1907. Divided and this application filed Jan. 25, 1909.

928,209. **Combined Distributor and Timer Device.** Theodor M. Mueller and Albert Jacob, Dalton, Mass., assignors to Pittsfield Spark Coil Company, Dalton, Mass., a Corporation. Filed Nov. 13, 1908.

ISSUED JULY 20, 1909.

928,351. **Oil-Gun.** Thomas B. Wilkinson, Los Angeles, Cal. Filed Nov. 2, 1907.

928,405. **Internal-Combustion Engine.** Henry H. Simon, Atlanta, Ga. Filed July 30, 1908.

928,484. **Sparker.** George A. Weideley, Indianapolis, Ind., assignor of one-half to Harold O. Smith, Indianapolis, Ind. Filed Jan. 2, 1908.

928,579. **Boat.** Adolph E. Apel, Atlantic City, N. J. Filed Nov. 18, 1908.

928,710. **Carbureter.** Frank Stagell, Verona, Pa. Filed April 9, 1906.

928,715. **Engine.** Thomas R. Thurber, Stockton, Cal. Filed Mar. 1, 1907.

928,800. **Roller-Bearing.** August Schilling, Berlin, Germany. Filed Oct. 24, 1907.

928,803. **Fuel for Internal-Combustion Engines.** Geo. B. Selden, Rochester, N. Y. Filed Dec. 7, 1903. Renewed May 7?, 1909.

928,824. **Circuit-Closer.** Orville M. Tustison, Bainbridge, Ind. Filed June 30, 1908.

928,828. **Carbureter.** Alexander Winton, Cleveland, Ohio. Filed April 9, 1907.

928,842. **Internal-Combustion Engine.** Emile Berliner, Washington, D. C. Filed Mar. 31, 1909.

928,895. **Stockless Anchor.** Walter S. Bickley, Chester, Pa., assignor to Baldt Anchor Company, a Corporation of New Jersey. Filed Oct. 6, 1904.

928,897. **Fire-Extinguishing Apparatus with Siphon Arrangement.** Walter Böckem, Rath, near Dusseldorf, Germany, assignor to the Firm of W. Graaff & Compagnie Ges. mit beschr. Haftung, Berlin, Germany. Filed Apr. 17, 1906.

ISSUED JULY 27, 1909.

928,955. **Automobile-Propelled Vessel.** John W. Freeman, Joplin, Mo. Filed Oct. 6, 1908.

928,956. **Anti-Friction Bearing.** Heinrich Froböse, Bielefeld, Germany. Filed Feb. 12, 1908.

928,957. **Steering Mechanism.** Louis Gabetti, Hoboken, N. J. Filed Mar. 2, 1909.

928,963. **Battery-Contact.** Julius H. Gugler, Minneapolis, Minn., assignor to The Battery Company, Milwaukee, Wis., a Corporation of Arizona. Filed July 25, 1908.

929,057. **Exhaust for Motor-Boats.** Julius W. Walters, Glens Falls, N. Y. Filed July 28, 1908.

929,139. **Barge.** Henry W. Kirchner, St. Louis, Mo., assignor to River & Rail Transportation Company, Guthrie, Okla., a Corporation of Oklahoma. Filed Apr. 15, 1907.

929,174. **Boat-Propelling Device.** Napoleon B. Thibert, Worcester, Mass., assignor to Matthew J. Whittall and Alfred Thomas, Worcester, Mass. Filed Sept. 16, 1907.

929,290. **Carcureter.** John W. Stevens, St. Paul, Minn. Filed Mar. 8, 1909.

929,292. **Electric Igniter for Explosion-Engines.** Walter C. Thornhill, Minneapolis, Minn., assignor of one-half to Charles W. Garden, Minneapolis, Minn. Filed Aug. 26, 1907.

929,266. **Means for Purifying Waste Oil.** Carl A. J. Albert, Kvillebäckevägen, Gottenborg, Sweden. Filed June 1, 1906.

929,296. **Acetylene-Gas Lamp.** William A. Fenton, Sioux City, Iowa. Filed Dec. 26, 1908.

929,322. **Nut-Lock.** Anton Nordlund, Warroad, Minn. Filed July 3, 1908.

929,327. **Carbureter.** Bert Rinke, Detroit, Mich., assignor of one-half to Hacket Bros., Detroit, Mich., a Firm. Filed Nov. 22, 1907.

929,329. **Gear-Casing.** Ernst Rosenberger, Mankato, Minn. Filed Mar. 25, 1909.

929,286. **Tool or Machine for Making Storage-Battery Grids.** Rufus N. Chamberlain, Depew, N. Y., assignor to Gould Storage Battery Company, New York, N. Y., a Corporation of New York. Filed Jan. 5, 1906.

929,429. **Pneumatically-Operated Ignition Device for Gas-Engines.** Charles G. Hess, Center, Colo. Filed Apr. 22, 1908.

929,484. **Piston Packing-Ring.** Ernest W. Petter, London, England. Filed Aug. 4, 1908.

929,521. **Clutch Mechanism.** Benjamin S. Truxal, Chattanooga, Tenn. Filed Oct. 17, 1907.

929,529. **Propeller.** Joseph Woll and Adam Woll, Duquesne, Pa. Filed Aug. 18, 1908.

929,532. **Nut-Lock.** Arthur H. Armstrong, Sandwich, Mass., assignor of one-half to H. Crosby Kennett, Conway, N. H. Filed Nov. 23, 1907.

929,540. **Reversible Petroleum and Compressed-Air Motor.** Marius Berliet, Lyon, France. Filed Feb. 24, 1908.

929,554. **Explosive-Engine.** Arthur F. Clarke, Butler, Pa. Filed Aug. 14, 1906.

929,581. **Adjustable Flexible Bearing.** Myron A. Ganlard and Edgerly R. Bailey, Clarinda, Iowa. Filed Apr. 27, 1908.

929,588. **Self-Starting Device for Gas Engines.** William A. Hansen, San Francisco, Cal. Filed Nov. 16, 1907.

929,607. **Induction-Coil.** Burton L. Lawton, Meriden, Conn., assignor to The Connecticut Telephone & Electric Company, Meriden, Conn., a Corporation of Connecticut. Filed Jan. 12, 1906.

929,622. **Explosive-Engine.** Isaac G. Neuber, Detroit, Mich. Filed Sept. 23, 1907.

929,635. **Electric Switch.** Nathan H. Suren, Needham, Mass., assignor to The Gamewell Fire Alarm Telegraph Company, New York, N. Y., a Corporation of New York. Filed May 23, 1908.

12,995. (Re-issue.) **Lantern.** William S. Hamm, Hubbard Woods, Ill. Filed June 7, 1909. Serial No. 500,781. Original No. 910,673, dated Jan. 26, 1909.

ISSUED AUGUST 3, 1909.

929,796. **Reversing-Gear.** Russell N. Smith, Alma, Wis. Filed June 12, 1908.

929,829. **Internal-Combustion Engine.** Walter Burnell, Weston-super-Mare, England. Filed Jan. 26, 1909.

929,956. **Combustion-Motor.** Giovanni Enrico, Turin, Italy, assignor, by mesne assignments, to F. I. A. T. Fabbrica Italiana Automobili Torino, Turin, Italy, a Corporation of Italy. Filed Mar. 13, 1906.

930,050. **Search-Light Mounting.** Ernest C. Everett, New York, N. Y., assignor to R. E. Deitz Company, New York, N. Y. Filed June 29, 1908.

930,065. **Electric Storage Battery.** Bruce Ford, Philadelphia, Pa. Filed Sept. 7, 1906.

930,071. **Flexible Pipe-Joint.** Warren A. Greenlaw, Melrose Highlands, Mass., assignor to The Greenlaw Manufacturing Company, Boston, Mass., a Corporation of Maine. Filed Apr. 24, 1908.

930,165. **Funnel.** Levi E. Edmunds, Philadelphia, Pa. Filed Apr. 12, 1909.

930,196. **Timer.** Alvaro S. Krotz, Chicago, Ill. Filed Feb. 28, 1907.

930,220. **Propeller.** Elijah D. Parrott, Seattle, Wash. Filed Nov. 3, 1908.

930,270. **Clutch Member.** Edward M. Cook, Oberlin, O. Filed Sept. 17, 1906.

The Month's Record of Sales and Charters.

ALLEGRO—32 foot yacht, 16 h.p., sold by estate of John F. Perry to George H. Withington, of Providence, R. I.—(Frederic S. Nock.)

COLUMBINE—70 foot gasoline yacht, chartered by C. M. Gould, New York City, to Robert Winsor, Boston, Mass.—(Stanley M. Seaman.)

DAISY—98 foot motor yacht, chartered by Col. Robt. Galloway, Memphis, Tenn., to J. G. Whalen, Pres. United Cigar Stores Co., New York City.—(Stanley M. Seaman.)

DAWN II—60 foot motor yawl, 25 h. p., chartered by Joseph A. Dunn, New York, to Sydney E. Hutchison, Philadelphia, Pa.—(Henry J. Gielow.)

DOLLIE BOWEN—53 foot motor boat, 25 h. p., chartered by W. T. Grenfell, New York City, to W. W. Frazier, Philadelphia, Pa.—(Frank Bowne Jones.)

EMILITA—38 foot hunting cabin launch, 12 h. p. motor, sold by Frank R. Pentz estate to Percy K. Hexter, N. Y. C., renamed Hope.—(William P. Kiggins.)

HOPE—38 foot hunting cabin launch, 12 h. p., sold by Percy K. Hexter, New York City, to Gilbert M. Tucker, Jr., Albany, N. Y.—(William P. Kiggins.)

IDA BELL—45 foot cruising launch, 20 h. p., chartered by James S. McLean, New York, to L. D. Hopkins, New York.—(Henry J. Gielow.)

IDA BELLE—Gasoline yacht, chartered by Louis Kahnweiler, New York City, to James N. Gallatin, Newport, R. I.—(Stanley M. Seaman.)

KATHRYN—37 foot yawl, 10 h. p., chartered by Wade Nixon, College Point, N. Y., to John K. Fitch, New York City.—(Frank Bowne Jones.)

MAO II—70 foot motor yacht, sold by Dr. Seymour Oppenheimer to F. L. Hutton.—(Tams, Lemoine & Crane.)

MASPETH—Gasoline yacht, chartered by Captain Geo. Hurrell, City Island, N. Y., to Lee Kohns, New York City.—(Stanley M. Seaman.)

MIST—40 foot motor schooner, 10 h. p., chartered by Harold Binney, New York City, to Daniel Bacon, New York City.—(Frank Bowne Jones.)

QUIXANA—32 foot motor sloop, 20 h. p., chartered by E. C. Van Wart, New York City, to F. M. Whitehouse, Manchester, Mass.—(Frank Bowne Jones.)

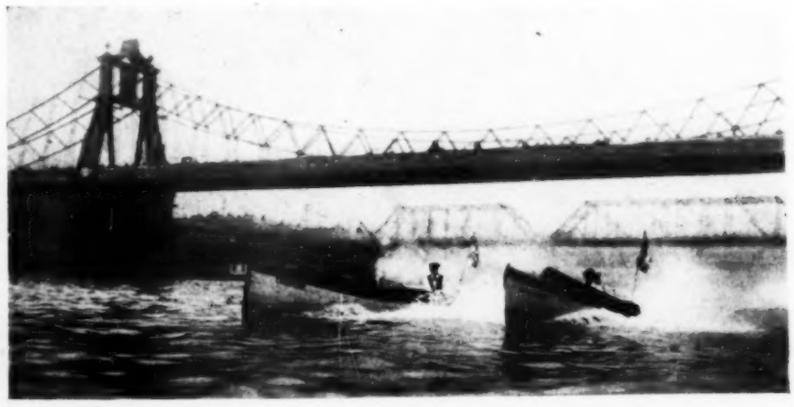
SURF—45 foot gasoline cruiser, 21 h. p., sold by R. W. Brockway, Moodus, Conn., to L. P. Bradley.—(Henry J. Gielow.)

THORA—Motor yawl, sold by John P. Donavan, New Rochelle, N. Y., to E. Childs, New York City.—(Stanley M. Seaman.)

TIP TOP—60 foot motor yacht, 40 h. p., sold by Peter Duffy to Commodore F. C. Swan.—(Tams, Lemoine & Crane.)

WOLVERINE—56 foot motor yacht, 25 h. p., sold by Howard Douglas, New York City, to Oliver W. Thomas, New Brunswick, N. J.—(William P. Kiggins.)

NOTE.—In our report last month the sale or chartering of Helys, Katydid and Vega were not credited to Frank Bowne Jones as they should have been.



Tranter and Hornet 25 feet and 22 feet respectively. Equipped with 3-cylinder, 17 h. p. Ferros.

New Motor Boat Owners.

California

BELVEDERE—George E. Dow.
COLUSA—Charles Heyl, Charles Jones.
SACRAMENTO—Charles Churchman, Peter Herold, W. M. Jones, Peter Langabaum, Herman Koch, Dr. C. M. Farris, H. E. Sleeper, R. D. Finnie, Miss Jessie Shaw.
SAN DIEGO—Frank C. Spalding.

Connecticut

BRIDGEPORT—Joseph Wallace, A. F. Law, Walter J. Stearns, Thomas Neehan.
DEEP RIVER—Lucien Phelps.
FAIR HAVEN—R. P. Curtis, Frances Fonder (Quinnipiac Ave.).
GLASTONBURY—Dr. E. M. Keene.
NORWICH—W. E. Perry.
SOUTH NORWALK—E. N. Sipperly, Jr.
STONINGTON—John E. Pryor.
WESTBROOK—Rodney J. Smith.
WINDSOR LOCKS—Frank H. Burton.

Delaware

WILMINGTON—William Pierson.

District of Columbia

WASHINGTON—M. F. Robey, F. F. Sweeney, E. J. Sissler, G. F. Hunt.

Florida

BRIDGEPORT—Mrs. Albert Green.
MIDDLETOWN—Robert M. Ireland.
TAMPA—A. G. Pearce.

Georgia

VALDOSTA—Allen Strickland.

Illinois

CAIRO—C. E. Hamilton.
CHICAGO—Premier Motor Co., Dr. B. L. Baum.
CLINTON—J. C. Slocumb.
DIXON—J. V. Weyant.
FULTON—Dr. L. Barber.
HAVANA—Frank Horstman, J. F. Alexander.
KEITHSBURG—E. Hannaman.
PEORIA—Elmer Ingram, Dr. DeMaas, J. Boetch.

Indiana

FORT WAYNE—J. B. Franke.
NEWPORT—William Lancaster.
TERRE HAUTE—Edward Yeakle, Ralph Dinkle.
VINCENNES—Harry W. Beggs.

Iowa

BELLEVUE—H. E. Hughey.
DUBUQUE—Claire Ede.
FT. MADISON—Ernest Corsepius.
GRINNELL—Harold Slaght, Arthur Epperson.
MUSCATINE—G. W. Menn, W. H. H. Whistler.

Kentucky

DAYTON—H. W. McGinniss.

Louisiana

LOGANSPORT—W. P. Fleming.
NEW ORLEANS—Theodore T. Reboul.

Maine

BANGOR—Guy S. Bachelder, A. M. Robinson, Hosea Buck, Richard True, Howard Libbey.
BATH—Dr. Randall D. Bibber.
BROOKVILLE—Charles Jones.
BIRCH ISLAND—Charles Whytal.
BOOTHBAY—C. J. Marr, Frank Hamilton.
CALAIS—D. Murchie.
CLIFF ISLAND—A. C. Griffin.
COSTIGAN—Francis Burr.
DEXTER—Harry Story, Frederick Abbott, Charles Ronco, Cyrus Springall.
GARDINER—Robert F. Maxcy.
HAMPDEN—Howard M. Pierce.
KITTERY—Frank Blake.
LISBON FALLS—G. F. Philbrook.
LONG ISLAND—Mrs. L. C. Davis.
NORTH BERWICK—F. Perkins.
OAKLAND—Fred L. Tapley, Dr. Winchester.
ORLAND—Robert Randall.
PENOBSCOT—Mrs. Bertha Friend.
PORTLAND—Clarence Brown.
SEBAGO LAKE—Charles K. Bispham.
SEBEC—W. F. Spurling.
SOUTH PORTLAND—Edward L. Brown, Charles W. Latham.
WALDOBORO—John J. Cooney.
WESTBROOK—J. Warren Phinney.
WILTON—M. B. Dalton.

Maryland

BALTIMORE—Owen C. Smith, William F. Cochran, George Wiessner, William P. Bigelow, William Dawson (1022 Pennsylvania Ave.), Clinton Raleigh (914 Fremont St.).
POCOMOKE—Captain Harman.

Michigan

DETROIT—T. R. Donovan.
GRAND RAPIDS—Asst. City Attorney Ferguson.
MOUNT CLEMENS—Walter Williams, W. Marsten.
OMENA—G. W. Ditman.
PONTIAC—George M. Campbell.

Missouri

KANSAS CITY—George R. Collins.

Massachusetts

ATTLEBORO—Roy Bradshaw.
BOSTON—E. J. Scigliano, William F. Cogan, Ernest Smith, C. H. Perkins, W. S. Goodwin, W. C. Merrill, E. E. Eaton.
BROCKTON—E. M. Henry.
CLIFTONDALE—Edward M. Platt (38 Morton Ave.).
DORCHESTER — Arthur Richards (52 King Street).
FALL RIVER—John Beattie.
HAVERHILL—George Martin, Henry Moses, F. H. Palmer, Joseph Mommill, E. W. Longfellow, Belmont Perkins.
HULL—Lawrence Bicknell.
HYANNISPORT — Frank McKay, Marcus H. Howes.
IPSWICH—P. Burridge, E. A. Safford, Dr. Codey.
LYNN—Thomas B. Gard, H. L. Hendricks, George L. Lyon.
MANCHESTER—James Means.
NANTUCKET—J. E. T. Butler.
MIDDLEBORO—John Miller.
NEWBURYPORT—Albert S. Dyer, George W. Chase.
NORTH CAMBRIDGE—A. E. Long.
NORTH MIDDLEBORO — Wayne Atwood, Thomas Robinson (Plymouth St.).
ONSET—George H. Hill, Frank J. Hannon, Jr.
PROVINCETOWN—Timothy Lyon, Dr. Russell Elliott.
PLYMOUTH—Carlton W. Holmes.
QUINCY—George D. Smith, Ralph E. Winslow.
ROXBURY—Alfred Nightingale.
SOMERSET—F. J. Staples.
SOUTH BOSTON—James McConologue.
SOUTH SEABROOK—Charles F. Janvrin.
SWAMPSCOTT—Willoughly H. Stuart.
TAUNTON—Fred M. Hathaway.
WAREHAM—James T. Hennessy.
WESTFIELD—Frank N. Loomis.
WATERTOWN—Jacob Fraser (No. Beacon St.).

New Hampshire

EXETER—Forrest L. Ellison.
FARMINGTON—Charles Peabody.
FRANKLIN FALLS — Celan B. Clark.
HILL—Charles F. Adams.
MEREDITH—J. M. Barker.
NEWCASTLE—John S. Flint.
PORTSMOUTH—Dr. Pierce, Frank Raynes.
WOLFEBORO CENTER—W. A. Miller.
WOLFEBORO—Clarence Kent.

New Jersey

ARLINGTON—J. C. Irwin.
ATLANTIC CITY—Edward G. Harris.
BORDENTOWN—Percy Thomas.
BURLINGTON—George Thomas.
MARBLE HILL—J. Schwietering.
NEWARK—Alexander C. Orr, John C. Guise, Sherman Camp, Harry Edwards, Frank Butterworth, P. J. Trainor, James Trimpi, W. W. Trowbridge, B. W. McPeek.
PATERSON—Donald Cooke (Van Houten St.).

New York

ALBANY—A. L. Judson, William Martin, Matt McCarty, Charles J. Hailes, Col. John S. McEwan.
AUBURN—W. A. Stansfield, Willard E. Case, M. Carmody.
BINGHAMTON—N. G. Wilcox.
BROOKLYN—W. M. Rountree (24 Seventh Ave.)
CLAYTON—C. L. Hayden.
FLUSHING—William T. James.
GAROGA—H. D. Simeson.
GLENS FALLS—C. N. Davis, F. Turney.
LAKE GEORGE—Edgar Bowne.
NEWBURG—Benjamin Cronin.
NEW YORK CITY—W. J. Morgan (1777 Broadway), William Lofink (4199 Third Ave.).
NYACK—Howard Garner.
OLEAN—E. Varley, Lee Conrad.
ONEIDA—Frank M. Williams.
OSSINING—Charles Cotton.
OYSTER BAY—Howard C. Smith.
PATHCHOGUE—S. P. Edmonds.
POUGHKEEPSIE—Robert Hosfall.
RIVER HEAD—Rev. H. S. Knabenschue.
ROCHESTER—Frank Garner (299 West Ave.).
ROGERS ROCK—H. P. Moore.
ST. LAWRENCE PARK—E. B. Rubsamme, Ruth Remington.
SARATOGA SPRINGS — Robert Green.
SCHENECTADY—James Sleight, J. B. Nolan.
SODUS—Burton B. Parsons.
TOMPKINSVILLE, S. I.—Thomas Kiernan.
WOODMERE—F. J. Walsh.

Ohio

CINCINNATI—John A. Payne, J. Parker.
CLEVELAND—H. P. Dyer.
MIDDLETOWN—Herb Brothers.
TOLEDO—J. M. Stoddard, Edward Ford, Fred Summerfield.
ZANESVILLE—J. P. Ford.

Oregon

PORTLAND—R. L. McLeay, R. F. Fox, W. C. Slattery.

Quebec

BEEBE PLAIN—John Elder.

Pennsylvania

ALLENTOWN—M. P. Schantz.
CHESTER—James B. Fryer.
MONONGAHELA—Joseph A. Sumney, Norton Collins.
PHILADELPHIA—Charles Glass.
PITTSBURG—A. M. Nutt, Thomas Borntsen.
SCRANTON—John Zurflieh.
WILKESBARRE—Luther M. Kniffen.

Rhode Island

NEWPORT — Robert W. Goelet, William J. Browley.
PAWTUXET—George Washington.
PROVIDENCE—Charles H. Merriman, Jr., W. A. Wallace.
WESTERLY—Captain Burbank.

Texas

HOUSTON—Charles Thomas.

Vermont

BARTON—Charles Clogston.
NEWPORT—C. R. Moore, C. S. Emery.
RICHFORD—George Bartlett.

West Virginia

WHEELING—Harry Rogers.

Wisconsin

APPLETON—E. P. Humphrey.
FOND-DU-LAC—H. W. Bruett, Anthony Lemieux.

Washington

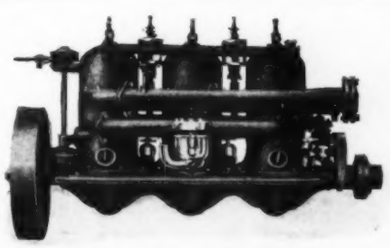
ANACORTES—A. D. Beatty, W. H. Bell, Wallace Sharp, B. Goff, R. E. Hardcastel, L. E. Dodge, J. P. Millett, P. Wagner, F. Schmidt.
BELLINGHAM—Wade H. Beach.
CATHLAMET—L. Jacobsen.
PORT TOWNSEND—A. M. Sewall.
POULSBO—W. H. Bach.
SEATTLE—Stetson Post Mill Co., Hewitt Lea Mill Co., Batch Lumber Co., Poulsbo Shingle Co.
SOUTH BEND—Johnson, Henry & Company.

Motors for Motor Boats.

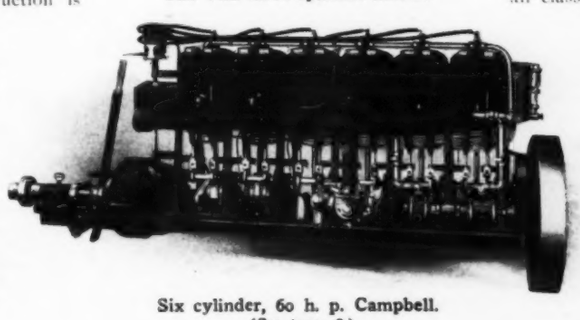
(*Continued from page 48.*)

Vim.—Vim Motor Mfg. Company, Sandusky, Ohio.—Vim motors are of the 2-cycle type with separate cylinders and are made in the following sizes, weights and prices: Single cylinder, 5 h.p., 145 lbs., $105; 9 h.p., 240 lbs., $150; 2 cylinders, 10 h.p., 225 lbs., $196.50; 18 h.p., 385 lbs., $291.50; 3 cylinders, 15 h.p., 300 lbs., $293; 27 h.p., 531 lbs., $403; 35 h.p., 500 lbs., $525; 6 cylinders, 70 h.p., $1,050. These prices are for the motor and ignition outfit in each case, but do not include the propeller equipment. A feature of construction is a bronze hand hole plate upon either side of the base which is fitted by a ground joint, no packing being required, and which gives ready access to the interior of the crank case. The exhaust outlets are so arranged that the exhaust pipes lead back at an angle of 45 degrees. Ignition is by jump spark.

If a valve is not continually lifted from its seat during the operation of grinding, rings are likely to be formed. Light rings may be removed by continued grinding, using fine emery or one of the common grinding compounds and finishing with crocus powder.



The Vim three cylinder motor.



Six cylinder, 60 h. p. Campbell.
(*See page 48.*)

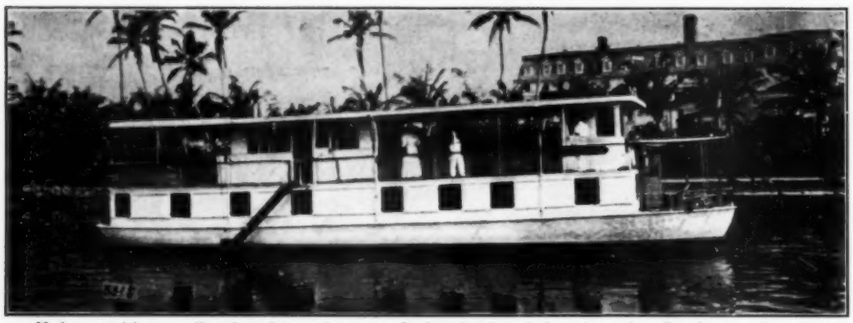
That Horsepower Formula.

WE have a number of letters of inquiry from readers of MOTOR BOATING regarding the use of the Denby-Marshall formula for calculating horsepower which appeared on page 42 of our August issue. This formula is intended to be used for high speed, high compression motors, such as those used in racing boats rather than for the slow speed, low compression motors, which are more often fitted in cruisers. This fact should have been brought out more clearly in the paragraph which accompanied the formula. A formula which is applicable to all classes of motors is:

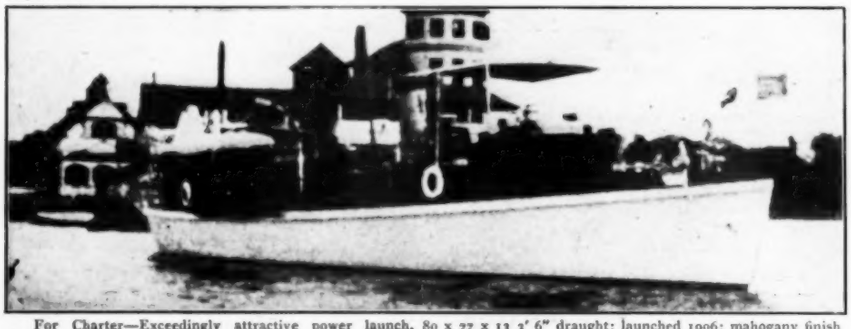
$$BHP = \frac{PASNE}{33{,}000 \times 4}$$

In which P = mean effective pressure (in slow speed motors usually about 80 pounds); A = area of piston in square inches; S = piston speed in feet per minute, (this can be determined by multiplying the revolutions per minute by 2 x the stroke in inches and dividing by 12); N = the number of cylinders and E = the mechanical efficiency which in such motors as we are considering may be taken as .75.

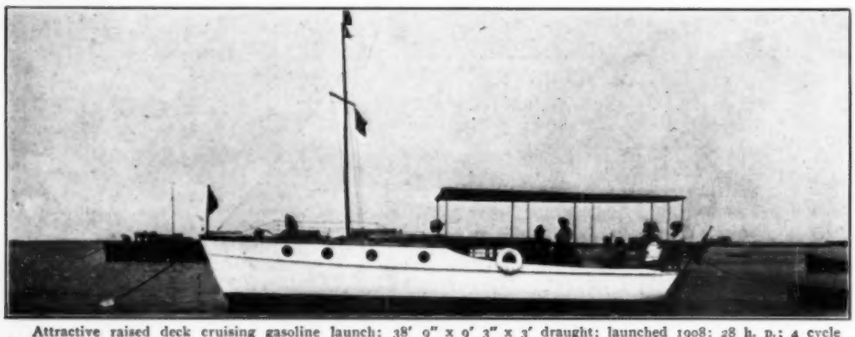
This formula applies to four-cycle motors. To adapt it to two-cycle motors substitute 2.5 for 4 in the denominator.



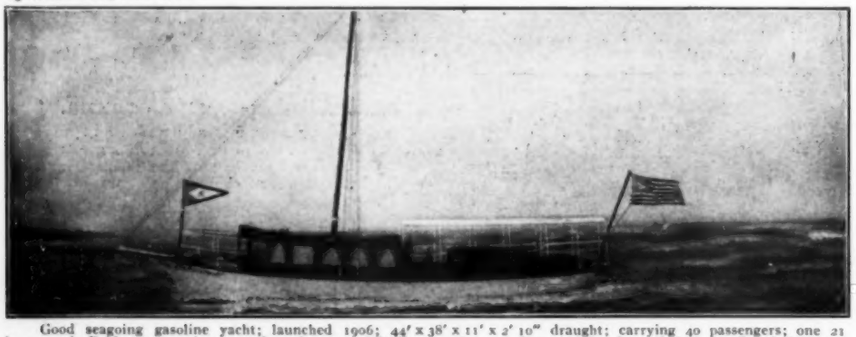
Modern cruising gasoline houseboat, 68 x 17 x 2 ft. draught; launched 1906; 32 h.p. Speedway engine; liberal accommodations; particularly suited for Southern waters. Arrangements made for collecting rain water. 800 gallons tank capacity. In fine condition. In commission. For full particulars apply to Cox & Stevens, 15 William St., New York.



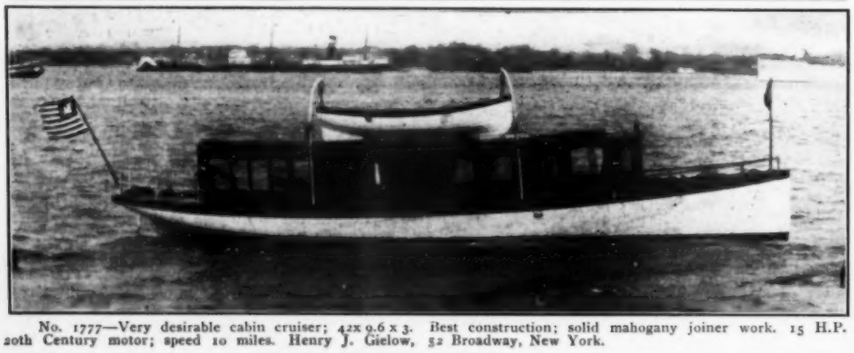
For Charter—Exceedingly attractive power launch, 80 x 77 x 13 3' 6" draught; launched 1906; mahogany finish throughout; large saloon; 2 double staterooms; bathroom and 2 toilet rooms, etc.; all conveniences; 70 h.p. 20th Century gasoline engine; speed 13 knots; price attractive. For full particulars apply to Cox & Stevens, 15 William St., New York.



Attractive raised deck cruising gasoline launch; 38' 9" x 9' 3" x 3' draught; launched 1908; 28 h. p.; 4 cycle Campbell motor; finely finished. In fine condition; in commission. For full particulars apply to Cox & Stevens, 15 William St., New York.



Good seagoing gasoline yacht; launched 1906; 44' x 38' x 11' x 2' 10" draught; carrying 40 passengers; one 21 h.p. 3 cyl. Bridgeport engine; speed 10 knots; originally cost $3,000. Lowest price for sale $1,600. For full particulars apply to Cox & Stevens, 15 William St., New York.



No. 1777—Very desirable cabin cruiser; 42x 9.6 x 3. Best construction; solid mahogany joiner work. 15 H.P. 20th Century motor; speed 10 miles. Henry J. Gielow, 52 Broadway, New York.

The Race Around Ontario.

(*Continued from page 9.*)

a few minutes in the lead at 6 A. M.

The steamboat channel in the bay is very narrow and many buoys mark the course. Flat rocks are all around it and tall weeds abound. Both Virginia and Julugra cut the corners at every opportunity and at a great risk of striking or fouling the wheel, but no mishaps resulted and they entered the Murray Canal only five minutes apart.

The six miles' dash through the canal was made in short order and a beautiful view greeted the crews as the splendid reaches of the bay revealed themselves in the glimmering sunlight, the windings of the channel boldly traced by the heights of Prince Edward Island on the one hand and the sloping shore of the Canadian mainland punctuated here and there by thriving towns on the other.

Satanita, the leader, now held first position over the last boat by two hours and a half and hardly a third of the distance had been covered. A dead calm prevailed in the bay with water smooth as finished marble. The sun climbed higher, but a cooling breeze from the S. E. picked up about ten o'clock which tempered the heat and made life on deck endurable. At Belleville, which was passed by Satanita at 6 o'clock and Julugra at 8:30 a gasoline station has been established, but they all rushed past without stopping, although Sans Souci, coming along hours later, went in and took on eighty-five gallons.

The long run from Cape Vincent to Charlotte, a distance of nearly a hundred miles, considering the battering seas, was made in good time, and all the racers sped across the finish line and up the Genesee River away ahead of the schedule that had been figured out, the Satanita arriving at 10:32 Friday night.

The crews were as follows: Satanita—Thos. B. Pritchard, H. N. Whittlesey, Chas. G. Davis, W. J. Baker, M. Rosenfeld.

Helen—C. M. Zaring, Benj. Poor, Alex. Major, Wm. McClellan.

Klatawa—F. J. Phelan, C. Rolls, G. Tuckett, C. Haney.

Virginia—W. J. Graham, Robt. Morley, Wm. Bedhorn, Fred. Gilbert.

Marietta—A. A. French, E. A. Jacus, Mrs. A. A. French, W. B. Webber.

Julugra—Fred A. Mabbett, Thos. Fleming Day, A. R. Teal, E. A. Anthony, W. B. Truesdell, Clute E. Noxon.

Sans Souci—F. A. Brownell, Lee Richmond, Saxe Hanford, E. Davison.

THE RESULT.

Boat. Allowance.	Rating.	Finish.	Elapsed.	Corrected Time.
Satanita (1)— 5.08.54	36.33	10.52.38P.M.	27.22.38	22.13.44
Virginia (2)— 14.29.26	23.59	8.23.10A.M.	36.53.10	22.23.44
Marietta (3)— 7.58.50	31.20	5.41.50A.M.	34.11.50	26.13.00
Helen (4)— 4.49.02	36.99	4.37.00A.M.	33.07.00	28.17.58
Klatawa (5)— 4.40.53	37.34	4.33.00A.M.	33.03.00	28.22.07
Julugra (6)— 6.39.35	33.36	9.11.40A.M.	37.41.40	31.02.05
Sans Souci (7)— 0	51.56	5.14.30A.M.	33.44.30	33.44.30

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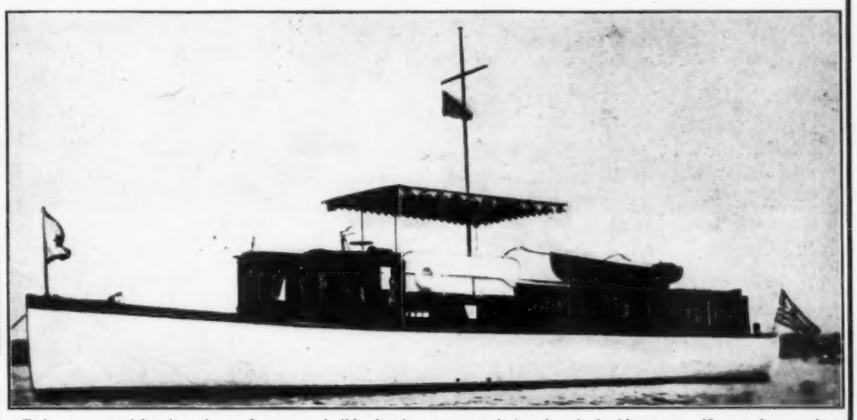
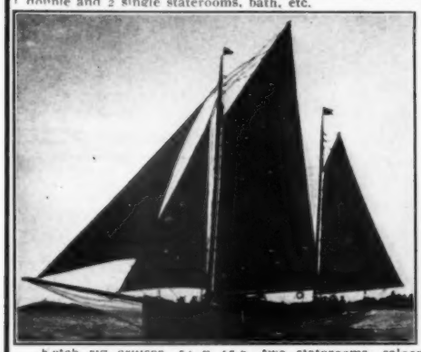
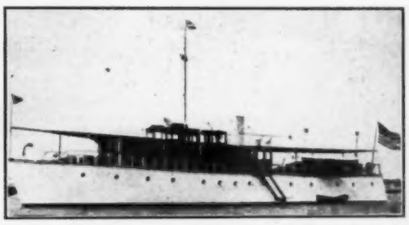


Twin screw cruising launch, 60 ft., recent build, sleeping accommodation for six besides crew. New 20 h.p. engines installed this season.

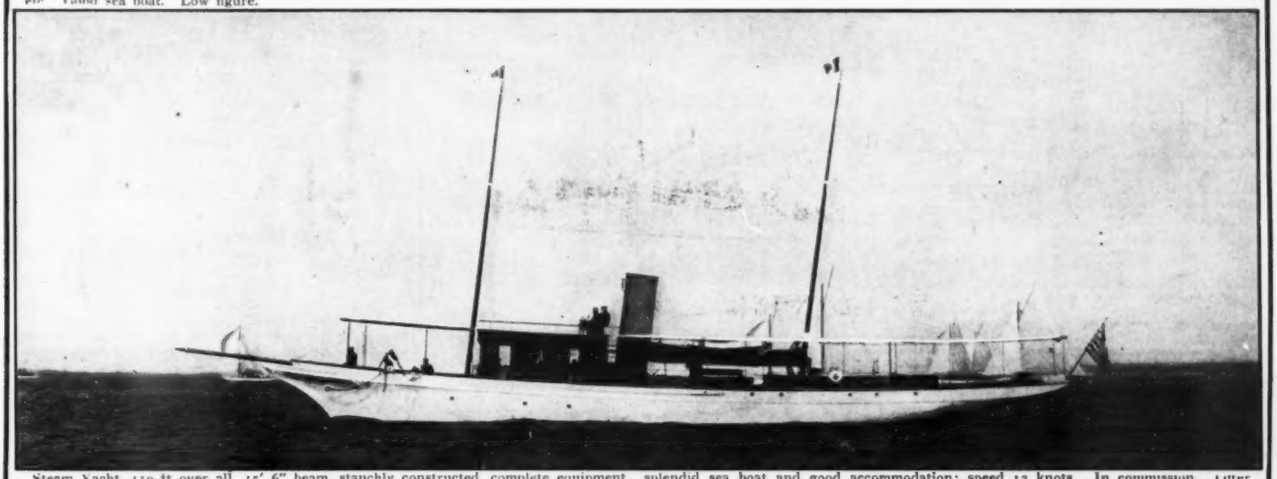


Ketch rig cruiser, 54 x 15.0, two staterooms, saloon, etc. Good sea boat. Low figure.

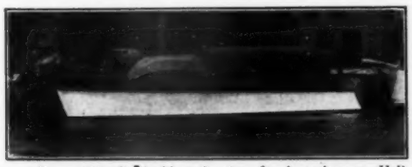
New 70 ft. raised deck cruiser, 12 ft. beam, Craig engine, reasonable figure. Several others, similar type, 55 to 65 ft.



Commodious 125 ft. gasoline yacht, built 1908; triple screws; very handsomely fitted and exceptionally roomy.

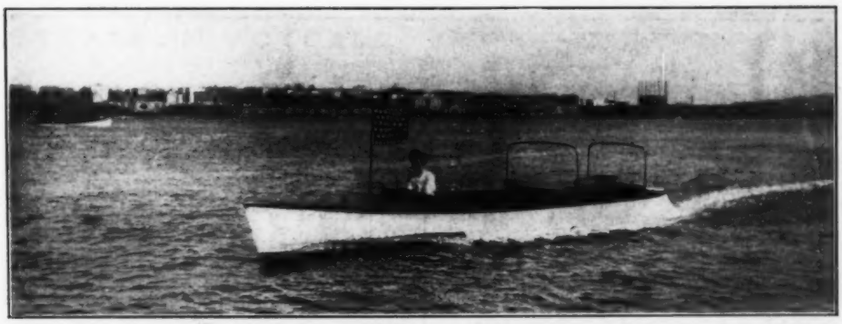


Steam Yacht, 110 ft over all, 15′ 6″ beam, stanchly constructed, complete equipment, splendid sea boat and good accommodation; speed 12 knots. In commission. Offer desired, sale or charter.



No. 2688—Desirable 28 x 6.4 ft. launch; 25 H.P. Ferro. Speed 14 miles. Built 1908. In commission; fine shape. Gielow, 52 Broadway, New York.

No. 946—SACRIFICE—Twin screw power houseboat; 70 x 22.2 x 2.6. Large accommodations. Motors develop 50 H.P. Henry J. Gielow, 52 Broadway, New York.



Motor Boat "HARE"—Speed over 20 miles, 19 guaranteed. Built by Gas Engine & Power Co., of double-planked Spanish cedar, oiled silk between. Mahogany finish, glass front, spray hood, special Seabury storm hood. Accommodates eight. Six-cylinder "Speedway" motor, 36 H.P., smooth running. Complete inventory. Excellent condition. This is not a racing launch, but a fine, fast, comfortable runabout, which makes no fuss at full speed (see photo). Will be sold now at low price. Inspectable in N. Y. City. A. P. PLUMB, telephone 5042 Spring. 35 Wooster Street.

FOR SALE—Full cabin cruiser 40' x 8' x 3', 10 H.P. 20th Century motor, controlled from pilot house; speed 9 to 10 miles; full outfit, including dishes, carpets, cushions, anchors, tender, etc. Beautifully finished in carved mahogany; cut glass in doors. There are two berths in pilot house, two in saloon and two in engine room. Has two toilet rooms. Galley with complete cooking utensils. Tanks of copper. Gasoline pipe leads outboard to motor. Is in excellent condition. Owner will sell very reasonably. For full particulars apply to Tams, Lemoine & Crane, 52 Pine St., New York.

FOR SALE AND PROBABLY FOR CHARTER—This attractive motor yacht, 76' over all, 68' water line, 12' 6" beam, 2' 5" draft. Well constructed throughout, having been built of the best material. Copper fastened. Cruised from New York to the Lakes several times. An ideal boat for Florida waters on account of her shallow draft. Equipped with two 40 H.P. motors. Speed 12½ miles. Two transom berths in pilot house. Owner's stateroom has a wide berth, bureau, wardrobe, etc. Four transom berths in the saloon. Two toilet rooms. Large amount of deck space. Carries two boats. Has awnings and is completely furnished for cruising. Now in commission in New York. For full particulars apply Tams, Lemoine & Crane, 52 Pine St., New York.

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Steering gear is mechanical, no cordage being used. It is more nearly perfect than any small boat steering gear ever seen in these parts.

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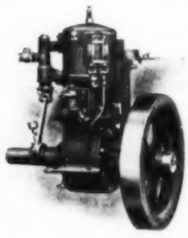

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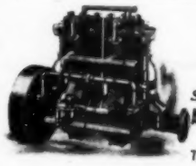

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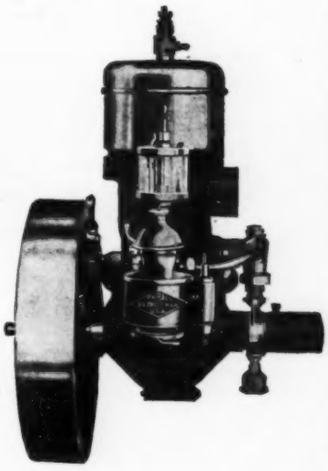

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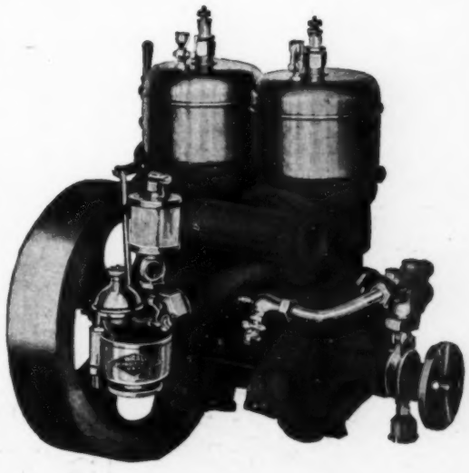

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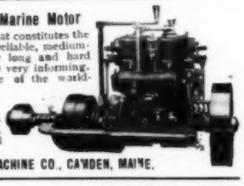

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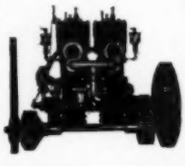

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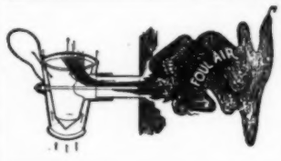

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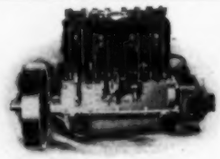

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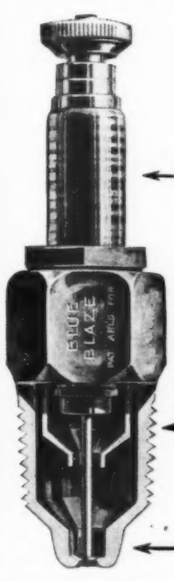

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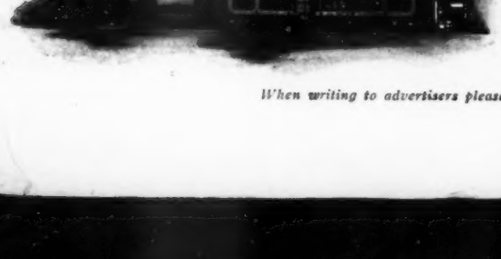

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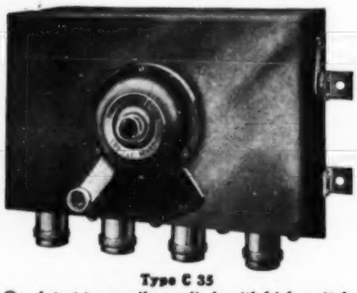

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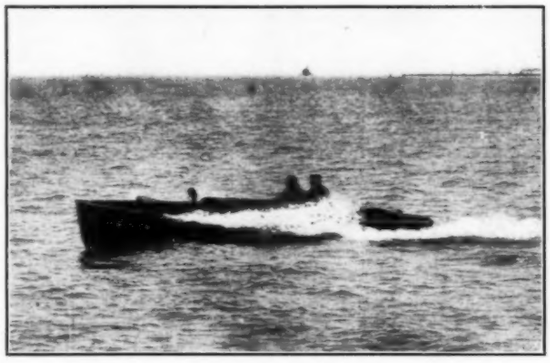

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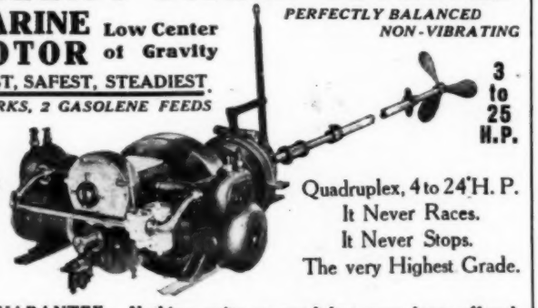

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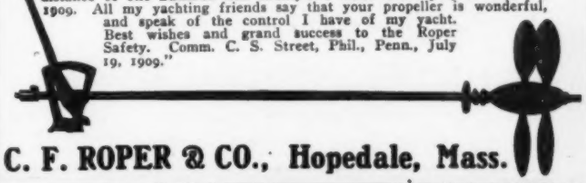

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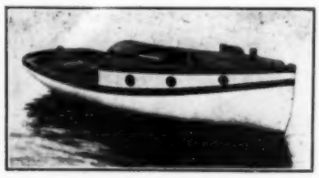

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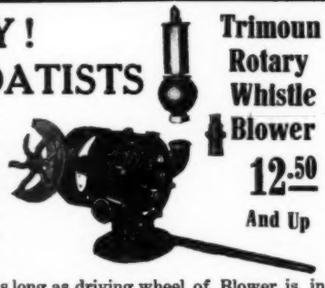

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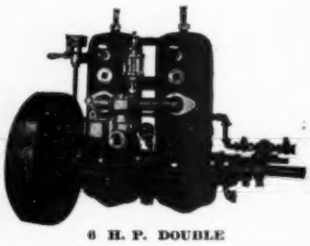

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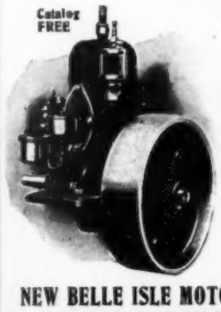

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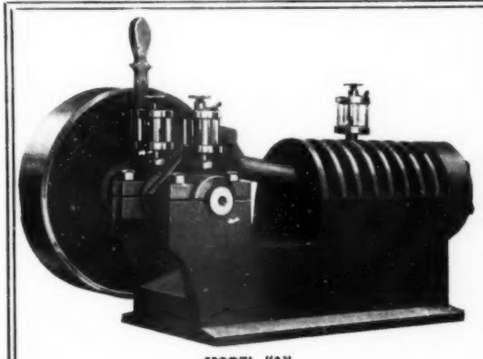

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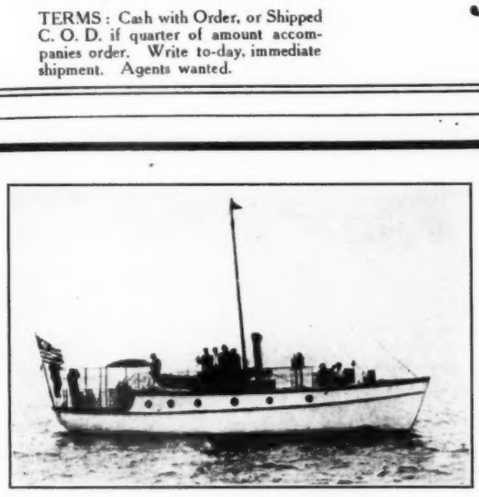

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Motor Boat Outfitters

119 Chambers Street, New York City

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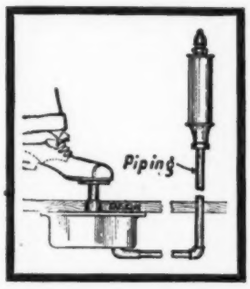

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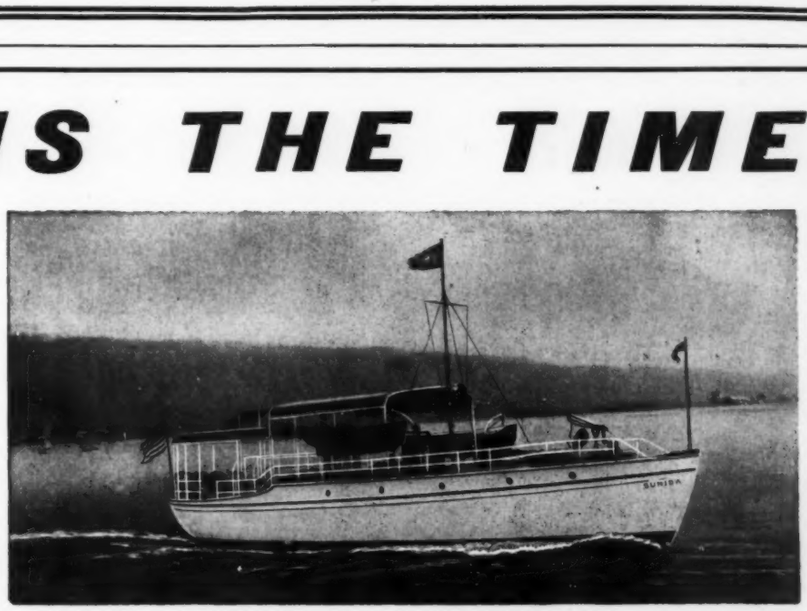

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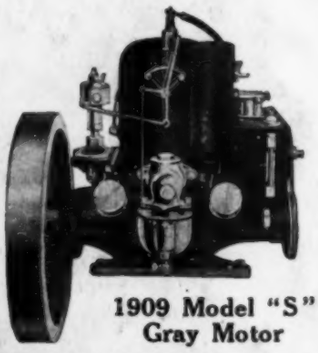

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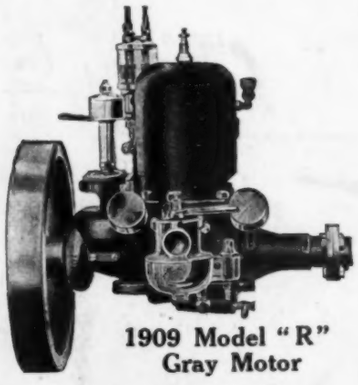

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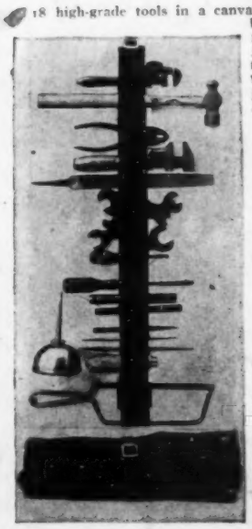

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